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The

British Medical Journal

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WITH SUPPLEMENT.

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INCOME TAX.

Motor Car Transaction.

"J. R. T." replaced his car in 1926 and asks whether he should have claimed any allowance as for 1925–26.

*** The "depreciation" or percentage allowance is a deduction from the average, and should be claimed when the return is made or at least before the assessment is confirmed, and it was to that allowance that we referred in our reply to "F. T. B." But the claim for cost of replacement or "obsolescence" is a matter to deal with when the accounts for the year in which the transaction occurred are taken into the average. Consequently, although "J. R. T." cannot now claim "depreciation" as for 1925–26, he can claim his renewal expenditure (maximum £520–£37=£483) when dealing with the results of the year 1926. On the other point mentioned, if "J. R. T." succeeded to the practice his liability for 1925–26 would strictly be on the three years' average profits of the practice which he took over, subject to a right of revision to the profits of the year; but in computing the profits of the new year the cash basis is inappropriate, and he would have to value his outstanding book debts to bring into the statement the full value of the first year's earnings.

LETTERS, NOTES, ETC.

THE D.P.H.

DR. HAIG (Crieff) writes: In the obituary notice of Dr. John C. McVail in your issue of August 7th the following occurs: "In 1885 McVail took the D.P.H. of Cambridge University. It was no easy thing for a busy man with so many other claims on his time and attention to find the leisure to prepare for such an examination." As McVail was born on October 22nd, 1849, he must have been 36 at that time and 42 when in 1891 he was appointed as the first medical officer of health for the counties of Stirling and Dumbarton. The M.O.H. for the burgh of Crieff has had a somewhat similar experience. Dr. Gairdner, nearly four years Dr. McVail's senior, took the D.P.H. of St. Andrews University in 1912 when entering his 66th year; he had been appointed the first M.O.H. for Crieff in 1889. At the time Dr. Gairdner studied the standard of education and examination for D.P.H. had been considerably raised owing to the action of the General Medical Council. It is to the credit of both McVail and Gairdner that neither of them was under any obligation to take this diploma, which is now necessary in the case of officers holding similar appointments to theirs.

THE MANUFACTURE OF DEGREES AND DIPLOMAS.

FROM time to time we have noted the existence in America of establishments for the sale of bogus degrees. Apparently this trade is not yet extinct, for a recent issue of the *Journal of the American Medical Association* contains an interesting account, with reproductions of the diplomas, of three institutions, entitled the Lincoln-Jefferson University, the University of Trinity College, and the American University (Los Angeles). The Council on Medical Education of the American Medical Association took the trouble of investigating these universities, stimulated thereto by receiving from the *Japan Medical World* photostat copies of diplomas issued to some students in Japan. These diplomas, complete with seals, crests, and signatures, would be an ornament to any consulting room. The Universitas Collegii Trinitatis prefers Latin to convey to all whom it may concern its *Salutem in Domino*. The Lincoln-Jefferson University is content with English. But the investigators discovered some interesting facts. Neither university has any buildings, laboratories, libraries, equipment, or even ground. Two of these institutions are housed in two small adjoining rooms in an office building in Chicago; while the third, the American University (Los Angeles), boasts of one small upper room, where the "Dean" sleeps on a dilapidated bed, when he is not carrying on the work of the university, with the help of an aged desk and a couple of chairs. The Lincoln-Jefferson University announces that, in little more than two years, degrees of thirty-eight varieties have been issued to 536 persons. In the thirty-eight varieties there have been degrees in "divinity," "theology," and "sacred theology"; in "law," "laws," "juris," "civil law," and "commercial law." In several cases the title "professor" has been granted. It is evident that our universities are behind the times in the scope they provide for the choice of a degree. This is shown, also, by the titles possessed by the two reverend heads of these universities—namely, M.A., D.D., LL.D., Ph.D., F.R.G.S., and A.K.C.!

This sort of enterprise, it would seem, is not confined to America, for there is, we gather, in Palermo an Italian Physico-Chemical Academy. Apparently the academy has been impressed by the financial possibilities of the degree-mongering methods which still exist in America. A member of the British Medical Association has received a printed letter from Professor A. Bandiera, secretary of the Academy, announcing that the council, in consideration of our member's many dignities and great learning, has resolved to nominate him an honorary member of the Academy, and to bestow on him a first-class silver-gilt medal for technical and scientific merit—price £2. The committee of the Academy contains the names of Senators, Members of Parliament, and an ex-Minister of Public Instruction. The field of activity is large, covering medicine, engineering, and the invention of chemical products and pharmaceutical preparations. The methods to be adopted are also a little mixed; they include the promotion of gymnastic and athletic clubs, the examination of food and drinking water, exhibitions of hygiene, special prizes for photography, and philanthropic work in medicine and engineering. The president of the Academy is one Professor Giuseppe Marletta, who appears to be a veritable Pooh-Bah of authority. He controls the conduct of affairs, proposes new members, enforces the constitution and regulations, presides at meetings, and elects the technical committee. The technical committee is concerned with many subjects, including "medical chemistry, bromotological chemistry, clinical and biological chemistry, and docimastic chemistry." The members of the Academy are divided into six categories; every member sends a sample of his scientific, artistic, chemical, agricultural, industrial, or pharmaceutical products to the Academy's museum, and includes with these his photograph for the Academy's album. All members, honorary or otherwise, appear to pay an entrance fee of £2, in addition, presumably, to the £2 for the medal. In return they receive a diploma, bearing the seal of the Academy. For an additional two dollars a bulletin is thrown in; this subscription is obligatory, "such publication," as the prospectus says, "being greatly to the interest" of members. Recently we learnt that the American bogus-diploma merchant found a field for his efforts in Italy. Apparently the Italian is taking his revenge; but why vent it on the Britisher?

"JOHNIAN HOGS": AN EXPLANATION.

A JOHNIAN writes: The review of Dr. Teichman's book, *The Cambridge Undergraduate 100 Years Ago* (August 14th, p. 309), contains the statement that "for some unaccountable reason Johnians were always called Johnian hogs." The nickname had died out in my time at John's (alas! nearly thirty years ago); but I have been informed that its origin was as follows: The gown of the Johnian undergraduates is made with horizontal bars of black velvet across the sleeves—whether three or four in number, I forget. The fancied resemblance of these bars to pigs' ribs earned for Johnians their uncomplimentary nickname. No doubt resentment of it gave rise to the custom of slitting the sleeves above the velvet bars and thrusting the arms through the slits. In this way the bars were hidden by the arms of the wearer. This custom probably still prevails. I venture to draw attention to this insignificant detail in the history of St. John's College because it indicates that the *gowns* and not the *characters* of Johnians were the *fons et origo* of the nickname.

DR. M. ASTON KEY (Southsea) offers an alternative: Two theories were, he says, current in my day, the first being that the famous St. John's Bridge of Sighs was nicknamed the isthmus of Suez, and this being transliterated into Greek produced συες—that is, pigs. The second derived the name from the velvet strips on the Johnian gowns, which were known as "crackling." Apparently there is no evidence indicating which explanation is the older, but it is at least conceivable that the former grew out of the latter.

MANIC-DEPRESSIVE PSYCHOSIS: CORRECTION.

DR. R. D. GILLESPIE (London) writes to correct a sentence in the preliminary note on the discussion of manic-depressive psychosis in the Section of Neurology and Psychology published on August 7th (p. 252). He is reported to have said that the number of cases (of manic-depressive psychosis) terminating in dementia was very small indeed. He desires it to be noted that what he said was: "The number of cases beginning as symptomatically pure manic-depressives and ending as schizophrenic dementia must be extremely small." This, he adds, is "a very different statement, and one more relevant to the discussion."

PICTORIAL ROAD PLANS.

VOLUME VII of the Dunlop pictorial road plans, *On the Road*, describes the three main routes through East Anglia, from London through Cambridge to King's Lynn and Hunstanton, through Bishop's Stortford and Thetford to Norwich, Cromer, and Yarmouth, and through Colchester and Ipswich to Lowestoft. After a short account of places of interest in East Anglia, the routes are indicated by a thick red line running up each page, on either side of which are pictures of some of the towns or villages passed through. These neat little guides are published by E. J. Burrow and Co., Cheltenham and London, price 6d. each.

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VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 36, 37, 38, 39, 42, and 43 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 40 and 41.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *136*.

British Medical Association.

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, NOTTINGHAM, 1926.

SECTION OF DISEASES OF CHILDREN.

HUGH THURSFIELD, M.D., F.R.C.P., President.

DISCUSSION ON ACUTE NEPHRITIS IN CHILDHOOD.

OPENING PAPER

BY

LEONARD G. PARSONS, M.D., F.R.C.P.,
Physician to the Children's Hospital, Birmingham.

DURING the last few years there has been a great deal of clinical and pathological research on nephritis, but the investigations have largely dealt with the manifestations of this disease in adults. The manifestations in childhood have received relatively little attention, although the problems are perhaps not so complicated as in the adult. In the adult the picture is often complicated by previous attacks, and it is difficult to estimate the etiological factor; whereas in the child the evaluation of the etiological factor is simpler, as is the problem of correlating symptoms with the structural changes, and of assessing what has been called the functional pathology of the kidney.

Whilst it is true that the problems to be faced are relatively simpler in the child than in the adult, "simple" is really the last word that can be applied to them, for they are many and varied, and many seem at the moment almost insoluble. In this discussion it will be impossible to treat the subject at all exhaustively, but a few of the problems which require solution may perhaps be indicated. What are the etiological factors of nephritis? How can the cases be classified? What is the cause of the oliguria; why does it not occur in all cases? What is the cause of the oedema? What is the cause of the critical diuresis? How many glomeruli and tubules are involved? What are the criteria of cure? Perhaps most important of all, what is the prognosis, and on what grounds can it be based? These, and very many other problems, will at once present themselves to our minds.

CLINICAL TYPES AND CLASSIFICATION.

A survey of a series of cases of acute nephritis admitted to the Children's Hospital, Birmingham, shows that advice was sought, in by far the largest number of instances, for one of two manifestations: either the child was passing a bloody urine, or he was puffy and swollen. Occasionally the symptom for which advice was sought was vomiting, or even diarrhoea and vomiting; the latter symptoms may have preceded the occurrence of haematuria, but more frequently of oedema. These two types of onset are associated with a series of symptoms and a clinical course which serve to differentiate the cases into two groups. In the haemorrhagic and larger group the cases showed but little oedema, rarely more than some puffiness of the face, and in some cases oedema was unnoticed. Frequently the haematuria occurred after a tonsillitis. The urine showed, in addition to the naked-eye blood, albumin and casts, but neither to the degree seen in the other group of cases; the amount of urine passed was variable, but frequently was practically normal in amount, at other times there was a degree of oliguria. If oliguria occurred, a subsequent polyuria was often a marked feature, and denoted that the case was improving. The haematuria was present for a variable period, but the tendency of most of the cases was towards recovery, sometimes complete recovery.

In the oedematous group there was in many cases no previous history of disease, and oedema was the characteristic feature. This varied in amount, but was sometimes very marked, and often the only symptom of which complaint was made. The urine was usually diminished in amount, and rarely showed naked-eye blood, but frequently under the microscope showed red cells. Casts were much more numerous than in the haemorrhagic type, pus cells were frequently a feature of the deposit, and albumin was also present in much greater amounts than in the preceding type. I have referred to the presence of vomiting, and at times of diarrhoea. The courses of these cases was longer, the tendency to recover less marked, but the tendency to become chronic more marked than in the haemorrhagic type. Other cases showed symptoms and signs which were a combination of the two types I have outlined.

Finally, there was another group of cases, which in the course of an illness such as diphtheria, scarlet fever, pneumonia, or rheumatism, either the above symptoms occurred, or routine examination of the urine showed a definite albuminuria with or without casts. It is clear, therefore, that cases of acute nephritis in children can be grouped symptomatically as either: (1) haemorrhagic; (2) oedematous or hydraemic; or (3) febrile albuminuria.

According to the modern or Cushny theory of renal secretion, when blood passes through the capillaries of the renal glomeruli an exudate consisting of water and all the crystalloid bodies of the plasma, in their respective proportions, is passed out into Bowman's capsule, by a process of physical filtration, which is modified normally by such factors as blood pressure and flow, the osmotic tension of the colloids of the blood, and the permeability of the membrane covering the capillary tuft. This glomerular filtrate, which is "practically deproteinized plasma," is modified in the tubules by the absorption of some of its contents, a function depending upon the vital activity of the tubular epithelium. The tubular epithelium takes up and returns to the blood an alkaline fluid containing in approximately the proportions in which they are present in normal plasma the threshold bodies—that is, substances, such as glucose, which do not appear in the urine unless they exceed a certain percentage or threshold value in the blood—whilst no threshold bodies such as urea are rejected and pass out into the ureter.

This theory is generally accepted as a working hypothesis except that some authorities still hold that the tubule cells secrete and do not absorb the threshold bodies; but according to some critics it does not provide a completely satisfactory explanation of certain phenomena in disease, and, as stated by Thomson, it may well be that the modern theory tells a part rather than the whole of the story of renal secretion.

Now it is universally admitted that there is a defective excretion of the threshold bodies in the oedematous or hydraemic form of nephritis; and whether we take the view that the tubules absorb or secrete these bodies it seems impossible to subscribe to the view that this defect cannot be correlated with structural damage to any particular portion of the kidney. It does appear to be a justifiable assumption that the defect in the cases which show oedema is a tubular one; and, on the other hand, its absence suggests that any damage to the tubules is slight in degree and that the origin of the blood is from some part of the kidney, in effect the glomerulus, and pathological evidence in favour of such a view is not lacking. It is, however, only fair to state that a criticism of this view has been made in a recent paper on the functional pathology of nephritis by Mayr. He states that chloride retention is not necessarily due to disease of the tubules, or may only indicate comparatively slight damage, and that therefore the conception of functional changes in the kidney must depend chiefly on the route by which protein reaches the urine. The protein is derived from blood plasma, and most or all of it passes through the glomerulus, and hence in his opinion hydraemic nephritis may be regarded as a disease mainly involving filtration. Mayr freely admits that such a view appears inconsistent with the microscopic changes found in the kidney; but as a set-off to the lack of pathological support he points out that, whatever view of the function (secretion or absorption) of the tubule cells be held, these are the cells which do the chief work of the kidney, and since urea concentration is normal in hydraemic nephritis these cells must be functioning well and able to do their work. Whilst I am ready to admit that in exudative nephritis the permeability of the capsule is altered so as to allow albumin to pass without any patho-

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from obstruction of the tubules by desquamated cells and extravasated red blood cells. This condition may largely be recovered from when the cause is removed.

I believe that such a classification is the best pathological one available, that it will fit most of the clinical cases, and that it can be made the basis of a clinical classification.

There is no lack of clinical evidence of the existence in childhood of a pure diffuse glomerulitis, fulminating in type, and showing the characteristic histological changes described by Shaw Dunn. Dyke has recently reported such a case in a girl aged 12 years, who during a period of five days before her death passed only five ounces of urine, which contained much blood but did not show any casts. The blood urea was 648 mg. per 100 c.cm., there was marked vomiting, a general morbilliform rash, and bleeding from the mouth and gums. The changes present in the kidneys were chiefly a diffuse intracapillary glomerulitis, but there was also some evidence of capsulitis.

In my opinion the following classification includes the various types of acute nephritis seen in childhood, and, whilst emphasizing certain clinical characters, has also pathological evidence in its favour. The retention of the terms "haemorrhagic" and "exudative" emphasizes the fact that haematuria is the characteristic symptom of the first group, oedema of the second group of cases.

1. Acute haemorrhagic or glomerular nephritis.
   (*a*) Mild type (focal glomerulitis).
   (*b*) Severe type (diffuse glomerulitis)
2. Acute exudative or tubular nephritis.
   (*a*) Mild type.
   (*b*) Severe type. This form in many cases passes on into a subacute form, and then constitutes nephrosis (Volhard and Fahr).
3. Mixed forms. A diffuse glomerulo-tubular nephritis, which in many cases goes on into a subacute or chronic form (chronic parenchymatous nephritis), and in adult life may develop into the secondary contracted kidney.

Febrile albuminuria I believe constitutes the mildest form of acute nephritis. In many febrile conditions, such as pneumonia and rheumatism, it is possible in a series of cases to find some showing albuminuria, with or without casts, others showing a transient haematuria, and again others showing an obvious acute nephritis. The transient haematuria is typically seen in acute rheumatism, the patient does not appear to be any the worse for the occurrence, and the course of the disease is not modified. The true significance of these cases does not seem to have been recognized by many writers, some of whom speak of the condition as "renal irritation." There can be no doubt, I think, that these are actually a very benign type of nephritis, and that a febrile albuminuria may represent the mildest type of haemorrhagic or glomerular nephritis.

There is good evidence for believing that a febrile albuminuria may also represent the mildest type of tubular nephritis—that is, a form in which there is no oedema, but which if the case comes to autopsy shows changes in the tubule cells. In diphtheria, albuminuria without oedema and associated with tubular changes may occur. The occurrence of these tubular changes in febrile states and diphtheria without oedema has been used by Clausen as an argument in favour of his views that the "toxin" of nephrosis affects not merely the kidney, but also the tissues in general.

To make our suggested classification, therefore, more complete a subheading "transient types" might be added to the group of acute glomerular and tubular nephritis. The recognition of the existence of this group of cases is important, for many of them pass unnoticed, or are regarded as trivial, and it is not improbable that they form the explanation of those cases of chronic nephritis which appear to arise insidiously, and also of the failure to clear up what is apparently a first attack of a frank acute tubular nephritis. In this connexion it is of interest to note that Wilcox and Lyttle found, in about one-half of a series of 217 cases of acute infections, definite chemical evidence of impairment of kidney function, although many of these cases showed no clinical evidence of kidney involvement.

Nitrogen Retention, Blood Pressure, Uraemia.

Reference has previously been made to the fact that nitrogen retention and raised blood pressure are stated by some writers to be characteristic of the haemorrhagic, by others of the tubular, variety of acute nephritis. It would appear that both observations are correct and that the presence of these symptoms depends entirely on the severity of the case, although the explanation of their occurrence differs in the two groups of cases. In the glomerular type they are associated with a degree of oliguria. If there be no oliguria, blood urea and non-protein nitrogen are not increased nor is the blood pressure raised. On the other hand, if there be some oliguria, the blood urea, non-protein nitrogen, and blood pressure may be raised, and uraemic convulsions may occur. Some cases of haemorrhagic nephritis, during the first few days of their illness, show a considerable diminution in the amount of urine excreted, but subsequently commence, quite abruptly, to pass large quantities of urine up to 70 ounces or more in the twenty-four hours. This "critical diuresis" is of the most favourable prognostic import, and is probably due to urea retention. I believe that the swelling of the glomerular tuft mechanically produces a retention of water, and therefore of urea, and that when the swelling becomes slightly less, so that it is possible for more water to pass from the blood into the tubule, the "head" of urea in the blood causes a diuresis.

The prognostic importance of this critical diuresis was first impressed upon me when treating cases of blackwater fever, during the late war. I noticed that cases occurred in which oliguria was pronounced, and that although the blackwater disappeared in a day or two the urine did not increase in quantity. Such cases invariably died; whereas in other cases, after a short oliguria, marked diuresis occurred, and these cases practically always recovered, even although the blackwater remained after the onset of the diuresis.

In severe cases of the tubular form of acute nephritis blood urea and non-protein nitrogen may also be increased in the early days of the attack. The probable explanation of this increase is that advanced by Shaw Dunn and Jones, who produced, by the injection of sodium oxalate intravenously into rabbits, a tubular nephritis, showing urea retention, and an initial oliguria. They point out that whether the function of the epithelium of the first convoluted tubules be regarded as absorption or secretion, the fluid in the distal portion of the first convoluted tubules contain a higher percentage of urea than the filtrate leaving the tuft—that is, the cells normally have to prevent the high percentage of urea from finding its way back into the connective tissues and vessels—and that, in view of the destructive effect of the urine on most other living tissues with which it may be brought in contact, this property of the tubule must be recognized as a very highly specialized protective quality. Now if any of the cells are killed, as happens in oxalate nephritis, the dead cells cannot prevent the filtrate, which may have been already more or less concentrated, coming into contact with the exposed connective tissue surfaces, and consequently some part of the filtrate, or even all of it, may diffuse back into the more dilute and changing tissue fluids in the supporting structures. If the cells are damaged only and not necrosed, it is probable that in so far as they are damaged they lose a proportion of their protective power. From clinical considerations it would, however, appear that these cells, except when necrosed or very severely damaged, are active enough to resist absorption of urea (cf. Mayr), although possibly unable to resist the indiscriminate absorption of threshold bodies.

On this view the occurrence of raised nitrogen in the blood in severe cases can readily be understood. The oliguria of acute tubular nephritis may also be explained in part by the same thesis. It is clear that the oliguria of acute oxalate nephritis in rabbits is not due to tension inside the capsules of the swollen kidneys, for Shaw Dunn and his co-workers have also shown that the mean circulation rate through such kidneys is greater than in normal animals. Clinical experience also suggests that oliguria in the two groups of nephritis does not admit of the same

logical change being demonstrated in the capsule—or in other words that some functional glomerular change occurs—yet from the standpoint of the child's future surely the more important change is the structural change in the tubule. The clinician may perhaps be forgiven if he adopts the view that the change that can be seen has at least as much claim to be regarded as important as the change that cannot be seen, and that therefore he prefers to accept exudative nephritis as a tubular change, and not as a disease mainly involving filtration. According to Mayr the oedema is largely due to failure of the plasma protein to retain water in the circulation—that is, to diminution of the protein osmotic pressure, which normally tends to prevent fluid being forced into the tissues by the capillary blood pressure. He also thinks that the usual form of acute nephritis is of the hydraemic type. This is certainly not true of acute nephritis in childhood, for published statistics, and my own cases, show that by far the more frequent type is that characterized by the presence of blood and absence of any but slight oedema.

Acute nephritis in children, then, may be classified under two headings: (1) Acute haemorrhagic, or glomerular nephritis. (2) Acute exudative, hydraemic, tubular, or parenchymatous nephritis. The place of febrile albuminuria in such a classification will be considered later.

The unsatisfactory and confusing state of the classification of acute nephritis becomes obvious when an attempt is made to find out what clinical picture is described by different writers under these headings.

I will take the latest paper which has appeared on this subject, that of Paterson and Wylie. Under the title of "acute haemorrhagic nephritis" these writers give a description essentially similar to the one I have given of my own cases; they point out that these cases show no oliguria, and that the blood pressure and blood urea are not usually raised, and urea concentration is normal. The condition is regarded as probably of embolic origin, affecting a portion of glomeruli in a scattered manner. In their group of acute exudative or parenchymatous nephritis are included all cases of tubular and glomerular nephritis, post-scarlatinal nephritis being given as the best known example of the latter. Both tubular and glomerular nephritis are said to show the same symptoms, and during life it is usually conjectural whether the glomeruli or the tubules are chiefly affected. The symptoms described are the same as in my group of hydraemic cases. They found in this group that usually either the blood pressure or the blood urea is raised, and that urea concentration is impaired, and they think that the presence of toxins in the circulation is probably the cause of the kidney disorder.

From the foregoing it will be seen that although these writers state that in the haemorrhagic form the glomerulus only is affected, yet they classify glomerular nephritis with acute exudative nephritis. It is clear, however, that they realize that each of the two groups shows one distinctive feature—in the one case oedema, and in the other haematuria.

Hill gives a description of these two groups practically identical with that given by Paterson and Wylie.

Blackfan and Hamilton mean by acute glomerular nephritis a condition frequently preceded by some acute disease, in which haematuria is the striking symptom, and oedema is slight, serum protein is normal, blood urea and non-protein nitrogen tend to rise, arterial tension is raised, uraemia is not uncommon, and recurrence is rare. The characteristics of acute tubular nephritis are the absence of any history of acute infection and the presence of generalized oedema. In these cases albuminuria is marked, serum protein is low, blood urea and non-protein nitrogen are not increased, the blood pressure is not raised, uraemia is rare, and recurrence is common.

Clausen agrees with Blackfan and Hamilton, but for him, as for many of our transatlantic colleagues, parenchymatous or tubular nephritis becomes nephrosis.

The clinical pictures described by these two groups of writers are clearly fundamentally the same, and agree with my earlier statements, but they differ in relation to urea retention and increased blood pressure—for one group these are characteristics of the hydraemic, for the other of the haemorrhagic, type, and the pathology is also somewhat different. It seems possible, however, that there is an adequate explanation of the differences as regards urea retention, etc., to which reference will be made later.

Let us now, for a moment, consider the view of the pathologist as regards classification. The following classification and description of acute nephritis is that given by Shaw Dunn.

1. *Diffuse Glomerulo-Tubular Nephritis.*

A. *Glomeruli.*—A diffuse lesion of the glomeruli is the most important form of acute nephritis and is almost invariably found in cases which die of renal insufficiency, in the acute stage of the disease, but it is also often present where the nephritis appears as a complication of some septic or other infection, and is not directly the cause of death. This presumably is the type of lesion which exists during the acute stages of a large number of cases of acute nephritis, which ultimately recover. The lesion in the glomerulus may be:

(*a*) An intracapillary glomerulitis, showing all grades of severity, but affecting usually in similar degree every glomerulus of both kidneys. In extreme cases, especially those dying of extreme suppression of uraemia, the capillaries are so blocked that their circulation seems almost entirely checked, and in some of the severest cases the glomerular changes are entirely intrinsic.

(*b*) Capsulitis. In these cases, which may not differ in any clinical aspect from the foregoing, there is the appearance in the capsular space of exudates of blood fibrin and leucocytes, followed by catarrh and proliferation of glomerular and capsular epithelium, which accumulates in masses round about the tuft, often compressing it. The incidence of capsulitis varies greatly, from a few to nearly all the glomeruli.

B. *Tubules.*—The condition of tubules shows great variation. Often in cases dying of suppression they show no alteration, but lesions of all degrees may occur. The changes are more severe if there be capsulitis of the glomeruli.

2. *Focal Glomerular Nephritis.*

This is of fairly common occurrence, and may be found in forms of septic infection (so-called focal embolic type); it is best known as a complication of infective endocarditis. The essential lesion is the appearance of minute plugs of thrombin in glomerular capillaries, giving rise to necrosis, complete or partial, of the tuft, and which may be associated with more or less capsulitis, often localized over the infarcted area. These lesions are erratic in distribution and many tufts escape, while others apparently survive with partial damage. This form seldom, if ever, causes symptoms of renal insufficiency, although it may produce albuminuria and haematuria.

3. *Acute Interstitial Nephritis.*

This condition is possibly not very far removed from that of multiple pyaemic abscesses, and may occur as an early complication of scarlet fever and other streptococcal infections. As a rule the amount of undamaged renal tissue is so large that definite renal symptoms are absent, and therefore, from our point of view, this form can be disregarded.

An acute tubular nephritis without any lesion of the glomeruli can occur from chemical poisoning—for example, corrosive sublimate—but Shaw Dunn thinks that its occurrence, apart from poisoning, is rare. He does, however, state that in those cases of acute nephritis which have passed into the "nephrosis" type of subacute nephritis the tubules show marked changes and the glomeruli only slight ones, and indeed by some authorities are classified as normal, and that it is just in those cases in which the glomeruli are least certainly damaged that the symptoms are most purely hydraemic, and the tendency to uraemia and high blood pressure most in abeyance.

Muir adopts essentially the same classification, with the exception that he does admit the existence of—

4. *Acute Catarrhal Desquamative or Tubular Nephritis.*

This is a condition occurring in varying degree, as the result of acute infections, such as septicaemia and pneumonia, and is due to their toxins. It may occur in chemical poisoning. A degree of oliguria may be present

colloid pressure of the plasma. Severe cases of hydraemic nephritis are characterized by a particularly low osmotic pressure of the plasma, and if a case of acute nephritis shows a low osmotic pressure, such a case is likely to pass on into a chronic hydraemic nephritis, even if the oedema at the time of the acute attack be not very marked in degree.

In my opinion the best guide to the completeness of recovery of the kidney is by the estimation of the amount of albumin in the urine, when the latter is free from blood cells and casts. I am referring to the presence of such amounts of albumin as are too small to be estimated by an Esbach's albuminometer. The method of estimation is that introduced by my former colleague, the late Dr. J. W. Russell, and consists in comparing the albumin with a very delicate standard haze. The standard haze is practically the smallest haze recognizable in a good light against a dark background. A case can be regarded as cured when the urine is free from albumin, or when the amount of albumin is only a few units, and if this be uninfluenced by a full dietary and posture, and if the urine be free from red blood cells and casts.

In considering the question of prognosis the observations of Richards should not be forgotten. He has shown that in the frog normally only a number of glomeruli are working, but that under certain conditions fresh glomeruli become opened up—in other words, that the kidney has considerable reserve power. It is therefore possible for a functional recovery to occur in acute nephritis even although a certain number of glomeruli and tubules are permanently thrown out of action.

TREATMENT.

In discussing the treatment of nephritis I would lay stress on three things: (*a*) the necessity for rest; (*b*) the importance of a suitable dietary; (*c*) the removal of any focus of septic infection. By rest I do not mean so much any rest produced by limitation of the dietary, to which I refer later, but rest of the body as a whole, which is as essential in the treatment of acute nephritis as it is in the treatment of rheumatic heart disease. With the possible exception of the very mildest cases, the patient should be confined to bed for at least three months, and if at the end of that time the kidney responds by a noticeable increase in albumin when the patient assumes the upright position, or is given an increased dietary, the period of time in bed should be increased.

Although the present-day tendency is against a rigid milk diet in acute nephritis, I am old-fashioned enough to believe that such a diet is the most suitable. Although the excretion of protein end-products entails so little effort on the part of the kidney, and it is well known that complete "renal rest" in this sense cannot be produced even by starvation, I cannot accept the view that limitation of protein in the diet is unnecessary. For six to eight weeks the diet should consist of milk, which may be given as undiluted milk, or milk and barley water, or junket. Sugar may also be allowed as a sweetening agent, or the child may be given barley sugar. Fruit juice is also allowed as a flavouring agent, and at the end of six weeks a small amount of chocolate may be added. The first increase in food is the addition of breadcrumbs to the milk; later bread-and-butter; during the third month milk pudding, banana and cream, potato and green vegetables, and at the end of this month a small quantity of fat bacon, which should be well soaked overnight to remove as much salt as possible. During the fourth month, if the child has apparently recovered, a gradual return to the full diet is permitted. In the absence of symptoms the amount of albumin is carefully watched after each increase in diet.

The report of the Medical Research Council for the year 1924-25 contains the results of some experiments by Maclean on rabbits, which may have an important bearing on the treatment of nephritis. He found that the albuminuria, and other evidence of renal damage produced by high protein feeding, was apparently dependent on the lack of vitamins, or some other essential constituent of fresh food. When a small amount of cabbage was given no renal changes were produced, even when the animals were kept on an otherwise exclusively protein diet for long periods. The extreme sensitiveness of the renal system to lack of vitamins was very striking, and he concludes that excessive protein feeding as such is not harmful to the kidneys. These results are of extreme interest, but they do not, of course, prove that a high protein diet can have no harmful effect on an acute nephritis. The dietary I have suggested contains a fair supply of vitamins, but in view of this investigation, green vegetable in small amounts might be introduced into the dietary at an earlier stage.

The third essential in treatment is the removal of any focus of septic infection—a point which has already been stressed. Particular attention should be paid to the condition of the tonsils, nasopharynx, ears, teeth, and to the presence of any infective skin lesion, such as impetigo. The removal of tonsils and adenoids is best deferred until the third month of the illness, because occasionally the kidney condition is for a time somewhat aggravated by the operation, but in the majority of cases no such reaction occurs.

With regard to other points in treatment, I would say that in my view attempts to relieve the kidney by increasing elimination of fluids by the skin and by the bowel are of little value; that diuretics are probably harmful and should never be used; and that in the treatment of acute nephritis drugs have no place. The only exceptions to the latter statement are the following:

1. In cases which show a considerable amount of pus in the urine alkalis—for example, sodium bicarbonate or potassium citrate—may be used in an attempt to alkalinize the urine; but the results are not very satisfactory, and I think it is probably wiser not to give them for this purpose.

2. Occasionally in the earlier stages of the disease a ketosis occurs which can be treated by glucose and sodium bicarbonate.

3. In uraemia the value of intravenous injection of magnesium sulphate is undoubted.

GENERAL DISCUSSION.

Dr. J. M. SMELLIE (Birmingham) said that many classifications of nephritis had been suggested, but it was unusual for any two observers to hold similar views. Until much closer correlation of the clinical picture with the true histology of the morbid process or processes was possible no classification could be considered final. Surely all forms of acute nephritis were of secondary origin. In the minority the primary focus of disease was evident, but in the majority it was concealed. From a clinical aspect a large number of the cases of acute nephritis in childhood could be sharply divided into two groups: (*a*) the hydraemic, oedematous, or "exudative"; and (*b*) the haemorrhagic; though in a review of clinical histories many mixed forms were encountered. This purely clinical classification did not enter the precincts of pathology. Many observers had called the first group alternatively "acute parenchymatous nephritis," but Dr. Smellie objected to the term "parenchymatous" in this connexion, as it suggested that the parenchymatous changes were of negligible extent or not at all present in the haemorrhagic form. The classification given by Dr. Parsons rendered this view untenable. In the prognosis of acute nephritis in children, as in classification, an appreciable divergence of opinion existed. Fowler held that in children over the age of 3 years, if there were no specially bad symptoms, recovery would almost certainly occur. Holt, on the other hand, asserted that chronic nephritis was not a very uncommon sequel of the acute form. There was further difference of opinion on the help given to prognosis by the various renal function tests. The cases that Dr. Smellie had personally investigated from the prognostic point of view fell naturally into three distinct groups—namely, early, intermediate, and late. In order to ascertain the early prognosis eleven cases treated in the General Hospital, Birmingham, during the three-year period 1922-24 and discharged as relieved were taken. One child died shortly after leaving hospital, presumably from an acute exacerbation of the disease; two were known to be quite well; two could not be traced; and the remaining six had recently been seen and examined;

explanation, for whereas the critical diuresis is a common mode of cure in haemorrhagic nephritis, in tubular nephritis the increase in the amount of urine passed—which, it is true, may at some time amount to a polyuria—is gradual and often unnoticed.

The occurrence of raised blood pressure in severe cases of haemorrhagic nephritis has been mentioned. According to Volhard and Fahr a rising blood pressure precedes or is closely associated with the development of cerebral symptoms; but they cannot say whether these symptoms are secondary to the raised blood pressure or whether the cerebral symptoms and the increased blood pressure are due to circulatory disturbances in the brain. Blackfan and Hamilton have, however, clearly demonstrated that a steady rise in blood pressure is the most reliable sign of approaching uraemia. They found that patients with acute glomerular nephritis who developed uraemia showed an increase in oedema. There was a parallelism between (1) the cerebral manifestations, (2) the blood pressure, and (3) the oedema. When the blood pressure rose the patient vomited, became irritable, and complained of headache; at the same time oedema was indicated, either by an increase in the visible oedema or a gain in weight. The visible oedema was not necessarily a marked oedema. With increasing oedema and continued rise in blood pressure, visual disturbances, coma, and convulsions almost invariably followed. Decrease in oedema and fall in blood pressure were always coincident with the disappearance of cerebral symptoms. In their opinion raised intracranial tension, resulting from oedema of the brain, is the causative factor in the uraemic symptoms, and the raised intracranial pressure is the cause of the raised blood pressure. In favour of their hypothesis they quote (1) Cushing's experiments, which showed that when compression of the brain was produced in dogs the arterial pressure rose as the intracranial pressure was increased; (2) the favourable results of their treatment of uraemia by intravenous injections of magnesium sulphate; and (3) the finding in an autopsy of a case of uraemia a brain which was so oedematous and tense that when the dura mater was opened the brain literally bulged through the small incision.

In passing it may be remarked that uraemia occurring with acute nephritis is always of the type thus described, and has been labelled eclamptic pseudo-uraemia, to distinguish it from true uraemia, which is the terminal stage of chronic interstitial nephritis.

Etiology.

The etiology of acute nephritis presents some points of considerable interest. Marriott maintains that the symptoms of acute nephritis (glomerular and parenchymatous) are not due to renal insufficiency, but that the renal involvement is only part of a general disease, and that both forms are due to toxins, each elaborated by a more or less specific micro-organism. In glomerular nephritis the toxin, which is derived from a streptococcal infection, usually of the tonsils, acts as a capillary poison and increases the permeability of the capillary wall. In parenchymatous nephritis the toxin, which is due to a staphylococcal infection, usually of the nasal sinuses, acts by disturbing the normal physico-chemical equilibrum between the body tissue and fluids. Clausen also holds the same views; but the evidence that they produce to show that nephritis is only part of a general disease is not very convincing, especially as Marriott says that he does not include cases of nephritis in which there are bacterial embolic foci in the kidneys.

Whether the cause of acute nephritis be due to actual infection of the kidney with bacteria, or to toxin only, it is quite obvious, from a consideration of a series of cases, that the exudative type appears to arise in many instances without any obvious cause; whereas the haemorrhagic type in a very large number of cases is associated with acute infections, particularly streptococcal infections, and especially with a tonsillitis, or some infection in that area—for example, otitis media. Haemorrhagic nephritis also occurs in the course of other pyococcal infections, and I would mention in this connexion its occurrence in impetigo.

The results of bacteriological examination of the urine are variable; some authorities appear to have great difficulty in isolating organisms, others have found streptococci and pneumococci. On the whole, my experience has been that the findings are usually negative, but in rare cases streptococci and pneumococci have been found in haemorrhagic nephritis.

Although, as I have stated, many cases of exudative nephritis do not appear to have any obvious cause, yet Clausen would have us believe that even in these a nasal sinusitis is present, for in a series comprising all the cases (11) of parenchymatous nephritis seen at the St. Louis Children's Hospital in a period of three years he found that nasal sinusitis was invariably present.

In the remarks on pathology it will have been noted that Muir regards acute tubular nephritis as due to the action of toxins. The fact that in a diffuse glomerulitis all the glomeruli are affected is easier to explain on the ground of a toxic than a bacterial cause, whereas the focal glomerular infection may conceivably be bacterial in origin. The relatively common occurrence of recovery in cases of haemorrhagic nephritis is evidence in favour of a focal and not a diffuse glomerulitis as the cause of the group of mild cases, and therefore, if the foregoing argument be correct, of their bacterial origin. It will be remembered that such an embolic origin was suggested by Paterson and Wylie.

Prognosis.

This particular aspect of the discussion is to be considered by my colleague Dr. Smellie, and therefore I do not propose to deal with it at any great length. Complete recovery from an acute attack of nephritis is a possibility, although the tendency for the lesion to become a chronic and progressive one is well recognized. On the whole, the tendency of the mild haemorrhagic cases is towards recovery; mild exudative cases may also recover completely, but, except in the very mildest forms in this group, the tendency is towards developing into the subacute and chronic types. Indeed, as I have previously stated, it is quite possible that in many instances what is apparently a first attack of exudative nephritis is really a recrudescence of a previous mild, perhaps unnoticed, attack of nephritis. Recovery from a severe haemorrhagic or exudative attack is rare. In the former the fatal issue is more likely to occur in the acute attack, whereas in the latter the child becomes a chronic nephritic. Functional recovery, however, does appear to occur in some cases of subacute or chronic hydraemic nephritis (nephrosis) after many weeks or months, and when all hope of a favourable termination has been abandoned.

One of the most difficult problems in acute nephritis is to say whether a particular case has recovered or not. The disappearance of all symptoms and signs, and a urine free from albumin after return to full diet, and after assuming the upright position, can, of course, be taken as evidence of complete recovery. So many cases, however, show a faint haze of albumin after the disappearance of all symptoms, but in quite a fair proportion of these the urine eventually becomes albumin-free. The prognosis must be based on, amongst other things, the type and severity of the attack, persistence of red blood cells and casts, persistence and amount of albumin, the occurrence or not of a critical diuresis. The ordinary kidney function tests are, in my opinion, quite useless as a help in the prognosis of acute nephritis. In the acute stage they are valueless, and some indeed are harmful. The tests may show a deviation from the normal in cases which are passing into a subacute or chronic stage, but in these the prognosis is only too obvious. In the type of case in which help is most needed—that is, one in which recovery appears to be almost or quite complete—kidney function tests are quite useless as an index of the completeness or otherwise of the recovery, because the lesion in these circumstances is not sufficient in degree to produce anything but normal results.

Mayr has recently devised a relatively simple method of estimating the osmotic pressure of the plasma which can be used in clinical work. A determination of the osmotic pressure of the plasma may help in the prognosis of a case of acute nephritis, particularly in the early stages, and the method seems well worth investigating. The colloid osmotic pressure of the plasma appears to be exerted chiefly by the serum albumin; any form of albuminuria involves a loss of plasma protein and therefore a reduction in the

gradually. Rest, iron, and suitable clothing were the indications, but the little abdominal belts worn next the skin were not healthy. It was the thighs and legs that tended to be neglected without medical advice.

Dr. HUGH T. ASHBY (Manchester) drew attention to decapsulation of the kidneys for chronic nephritis. In the type of nephritis characterized by extensive oedema, large albuminuria with casts in the urine, toxic symptoms of the uraemic type, such as vomiting, drowsiness, etc., decapsulation became a definite indication, and might promise satisfactory results when the usual line of treatment failed. Subsequent to decapsulation of the kidney a marked diuresis took place, and this diuresis might bring about much improvement in the patient's condition, and allow him to pass a crisis. Dr. Ashby mentioned the case of a child who had been under observation for a year suffering from nephritis with marked oedema. It was decided as a last resort to decapsulate one kidney, after which the patient lived for eighteen months. Previous to operation she had passed 6 to 8 ounces of urine a day. After the operation the urine increased, so that at the end of a week she was passing 30 ounces in the twenty-four hours. It was found at the necropsy that the progress of the nephritis had not been arrested. Both kidneys were finely granular and well on the way to contraction. The changes in the decapsulated kidney were, if anything, more advanced than in the other. Decapsulation was not followed by the formation of a new fibrous capsule of any considerable thickness or vascularity.

Three views had been advanced to explain the results of decapsulation: First, that by depriving the kidney of its capsule and then bringing the cortex into contact with the perinephritic tissues new vessels were formed, which anastomosed with those of the kidney itself, thus providing for the removal of inflammatory exudate and assisting in re-establishing the renal function. This view was not substantiated by the case recorded; moreover, diuresis after decapsulation was generally set up a few days after operation, long before new vessels could be formed. Secondly, it had been suggested that the rapid effects after operation were due to relief of tension. But little actual tension could be seen at the operation. The kidney did not expand and the capsule did not appear capable of resisting tension. The rapidity of expansion in cases of pyelonephrosis proved that the capsule could have little resistance to pressure from within. Thirdly, it was much more likely, as Horder suggested, that the mechanism of the production of the diuresis and disappearance of oedema was the same as in the process of the inefficient wet cupping of the past. A very effective and direct wet cupping was done to the kidney itself by decapsulating it. If this was the true explanation it was possible that simple incision of the kidney would be as effective as decapsulation.

Dr. J. C. SPENCE (Newcastle-on-Tyne) did not regard classification in acute nephritis as of much value. In infants there were two varieties—a febrile nephritis with respiratory symptoms such as bronchopneumonia, much albumin, and little oedema, and a syphilitic nephritis with oedema of the feet and anaemia, but with an absence of preceding signs of syphilis. The patient in the second case always died. In other types of nephritis classification was of no value clinically. Often haemorrhagic cases after a few weeks became hydraemic. Prognosis could only be based on clinical observation; but biochemical tests were of some value. If the blood urea began to rise it was of some importance. The methods, however, were still largely experimental. The original focus causing a nephritis was often small and easily overlooked. Dr. Spence did not agree with Dr. Parsons about protein diet, since the protein in a pint of milk was about equal to the protein in half a pound of steak; but he admitted that meat might contain other deleterious substances. In many cases of chronic interstitial nephritis there was no history of an acute attack. It almost seemed as if the condition started as a congenital abnormality.

Dr. HUGH THURSFIELD (London) said that venesection, which was formerly an almost universal treatment of acute disease of all kinds, had now all but gone out of favour. Yet there could be no doubt of the service of timely venesection in acute oliguria in adults, and it seemed well worthy of consideration in some of the acute cases in children. Decapsulation of the kidney in acute cases possibly owed its somewhat rare successes to the principle of blood-letting; and the old practice of cupping had the same effect. Renal efficiency tests appeared to be out of favour, whether for diagnosis of types of the disease or for assisting prognosis. Dr. Thursfield thought that the standard of these tests had been insufficiently established in children, either in normal health or when the child was suffering from disease other than that of the kidney.

Dr. WILKIE SCOTT (Nottingham) thought that decapsulation was indicated (*a*) in hydraemic cases of prolonged duration—that is, in the large white kidney; (*b*) in acute nephritis with suppression, especially if there was a pre-existent chronic nephritis.

Dr. N. C. CAPON (Liverpool) discussed the classification of cases of nephritis, and emphasized the desirability of restricting the term "nephrosis" to the rare cases in which kidney degeneration (epithelial) existed without inflammatory changes. In treatment, he held that it was important to remove any septic focus without delay, even during the acute stage of nephritis; and he believed it to be probable that in the future renal decapsulation would be employed at an earlier stage in nephritis, and would not be used solely as a last resort.

Dr. J. D'EWART (Manchester) regretted that Dr. Parsons had not condemned beef-tea more thoroughly. Women seemed to be brought up to believe that beef-tea was necessary for all sick persons. He thought that a fairly rich protein diet led to improvement in cases of nephritis; and the addition of green vegetables was probably helpful. It was difficult to get parents to understand the necessity for rest for patients who appeared otherwise healthy.

Dr. HAZEL C. GREGORY (London) had found the constipation associated with prolonged rest so troublesome that she was in the habit of getting children up sooner than had been suggested. She thought that in infancy the etiology of the skin was associated with septic patches on the skin.

Dr. PARSONS, in reply, said that renal efficiency tests were of no use in the acute stage. They were simply tests of reserve function in the kidney. In acute cases where there was no reserve, the tests were useless and possibly dangerous. He thought that not so many patients as Dr. Spence thought went on to the chronic stage. The chronic patient turned up again and again, and so produced an impression of the frequency of chronic cases. Decapsulation was somewhat outside the scope of the discussion. In the only case in which he had seen it done the kidneys were under tension, but there was less urine after the operation than before. He thought nephrosis a horrible word, and everyone differed as to its meaning. Probably it was the same thing as chronic parenchymatous nephritis. A high protein diet was suitable in chronic cases, but not in acute. Dr. Parsons agreed that tonsils and other septic foci should be removed as early as convenient; but it must be remembered that occasionally nephritis flared up afterwards.

GOITRE IN CHILDHOOD.

BY

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BEFORE dealing with the question of goitre in children I would just like to say briefly, as a whole-time medical officer of health, that I recognize the need for co-operation between the health services and the general practice of medicine, and it was for this among other reasons I was present this morning. Even regarding the subject which has been under discussion, nephritis in children, which might appear purely a question for a private doctor, I found in my own district things which might be of interest

the blood urea was estimated and the urea concentration test performed. Of five cases of the hydraemic type, in four the blood urea was under 35 mg. per 100 c.cm.; a boy with cardiac enlargement and raised blood pressure had a blood urea of 98 mg. Urinary examinations showed no blood or casts in any case. The urea concentration test demonstrated a defective renal function in three cases, but in two of these the urea concentration factor was up to standard. The only child who had suffered from the haemorrhagic type had, on admission, only very slight facial oedema, and, though the urine was deeply blood-stained, symptoms of threatened uraemia developed in hospital. When examined, two years after the acute disease, the systolic and diastolic blood pressures were slightly raised; there were no abnormal urinary constituents, and the blood urea and urea concentration tests were within the limits of health.

As regards intermediate prognosis Dr. Smellie quoted the case of a boy whom he had watched for six and a half years. In November, 1920, he was in a comatose condition and having frequent fits. In March, 1925, he had chorea for six weeks. During this period the blood urea was within normal limits, and there was never any evidence of cardiac affection of either a rheumatic or renal origin. The blood pressure was normal. In April, 1926, the boy, aged 13 years, looked perfectly well and fit, with a healthy cardio-vascular system. The blood urea was a little raised—namely, 57 mg. —but the urea concentration factor was only 29. The urea concentration test did not give any evidence of impaired renal function. At present the clinical condition was one of health, but the biochemical findings were at variance.

For late prognosis, unless a minimum period of ten years had elapsed since the date of the primary acute infection, no really indicative results would be forthcoming. Therefore, notes of cases of acute nephritis during the ten-year period 1906-15 inclusive were collected. Of these, 64 were of the hydraemic type and 37 of the haemorrhagic. Forty-seven of the patients were traced—32 hydraemic and 15 haemorrhagic. Twenty-three of these were known to be alive, but could not be got to come for examination, as they could see no reason for it.

Clinical examination and renal function tests—blood urea and urea concentration—were performed in sixteen cases. An average period of sixteen years had expired after their discharge from hospital. None of these patients complained of any symptoms (oedema, polyuria, headache, etc.) referable to disturbed renal function, though in all direct information on these points was invited. Only five patients had completely normal hearts, blood pressure, blood urea, urea concentration test, and urea concentration factor. The other eleven gave such diversity of clinical and laboratory findings that the results could not be correlated in any way. Clinically, judged on life insurance standards, ten of these adults were fit and well. The remaining six had slight cardiac enlargement and a raised blood pressure, notably the diastolic, but no abnormal urinary constituents. An opinion based entirely on the tests for renal function—namely, either a raised blood urea, or a low urea concentration test, or both—would have indicated six with disturbed function. Four of these, judged clinically, would have been considered normal and healthy, but the remaining two did have a raised blood pressure.

From these findings Dr. Smellie concluded that the early prognosis, judged on six cases examined eighteen months to four years after an acute nephritis, revealed only one case of clinical and biochemical findings indicative of renal damage; that in one case observed for six and a half years the boy passed through an acute pyrexial illness without any recurrence of kidney mischief; that remote prognosis is based on review of thirty-nine cases, at an average period of sixteen years after an acute nephritis. All these were to-day symptomatically well. Four had passed through pregnancy, one of whom suffered from convulsions at the time of labour. Of sixteen submitted to clinical examination and to tests for renal efficiency none had any of the urinary changes associated with a chronic nephritis. Six revealed evidence of disturbance of the cardio-vascular system, but it might not be correct to assume that this disturbance was consequent upon the previous renal inflammation.

Dr. Smellie thought that positive biochemical results, in the absence of symptoms or physical signs, called for a further careful scrutiny of the patient and a certain guard in the prognosis until he had been observed for a longer period, but could not be taken as conclusive evidence of renal damage. He thought also that chronic nephritis was much more likely to develop from a succession of mild acute attacks—so often inadequately or totally untreated—than from one severe attack with adequate treatment. This opinion would satisfactorily account for the absence from his cases of the chronic forms of the disease, as only severe cases were admitted to hospital, and any case not definitely a primary acute attack had been excluded from consideration. His investigations had led him to the opinion that the ultimate prognosis of acute nephritis in childhood hinged entirely on the treatment that had been given. If the original acute disease received efficient treatment complete recovery would ensue in a very high proportion of cases. Conversely, the subacute and chronic varieties of nephritis encountered in early adult life were largely, if not entirely, due to inadequate treatment of the initial acute infection.

Dr. HUGH BARBER (Derby) said that twenty years ago acute nephritis in a child was regarded either as due to scarlet fever or else as idiopathic in origin. More recent investigation had demonstrated the importance of focal sepsis in the throat, nose and ears, or teeth. The cases put down as idiopathic in origin became fewer, but with their present want of knowledge they still had such a group. There did not appear to be any evidence of epidemic nephritis in children.

Acute nephritis was not very common. Dr. Parsons made an apt comparison between acute nephritis and acute rheumatism with regard to the length of rest required. It was possible to make a comparison between the two conditions so far as diagnosis was concerned. In both early diagnosis was of the utmost importance in treatment. Of the numerous complications two appeared worthy of emphasis: Pericarditis, which was fairly common, was an insidious condition giving rise to little if any pain; persistent vomiting might be the only symptom of uraemia. Persistent vomiting in a case not yet diagnosed should always suggest the necessity for examining the urine. The diagnosis of acute nephritis was made from the characteristic findings in the urine and necessitated a microscopical examination, but did not require a centrifuge or full laboratory report. Renal efficiency tests were more interesting in prognosis during convalescence, but were not sufficiently delicate to help very much. The urea concentration test did not require a clinical laboratory. It was of some value towards the later stages of convalescence. Its chief value was in helping to detect chronic interstitial nephritis, which in children might be very insidious. The estimation of urea in the blood was a useful guide to diet in all cases of nephritis, but it was only towards convalescence that any such guide was required in acute nephritis. In those cases which had progressed to an extreme degree of oedema with much albumin in the urine the blood urea was nearly always within the normal and a diet rich in protein gave the best results. Thus an estimation gave confidence in prescribing a diet which might perhaps seem rather unexpected to the parents. The prognosis, judged clinically, was serious in proportion to the length of time for which symptoms of acute trouble were present. The first sign of improvement was when diuresis took place. To obtain this improvement it was not necessary to give large quantities of fluid.

The chief essential in treatment was absolute rest in bed, warm between blankets, continued certainly until there was no longer blood in the urine, and if possible until albuminuria had cleared up; failing that, for about three months. For diet, water, fruit juice and sugar, and then diluted milk. Meat extracts should, of course, be avoided. Aperients should be mild; and for threatening uraemia, hot packs or hot-air baths were better than diaphoretic drugs. Convalescence should proceed very

such as rapid pulse, tremor, mental brightness, and a tendency to perspire. One thing I particularly want to lay stress on is that thyroid enlargement in children is a preliminary to two conditions—endemic or colloid goitre on the one hand, and toxic adenoma and Graves's disease on the other.

Regarding the association of thyroid enlargement in children with Graves's disease I would refer to the work done by Dr. Brewer of Swindon, who has carried out a large number of examinations to find the relationship between the conditions; his findings suggest that slight hyperthyroidism in childhood is a very much commoner condition than has been hitherto supposed. In my own district in Glossop I carried out an investigation of a similar kind, but I did not find hyperthyroidism present to any extent among the children. There appeared to be, on the other hand, a trend towards hypothyroid conditions. It is quite possible, however, that the tendency to hyperthyroidism varies according to locality, and that in districts where colloid goitre is prevalent the thyroid enlargement among children will be more of the hypothyroid type, whereas in areas where exophthalmic goitre is prevalent there may be hyperthyroidism among children—that is, it will be the precursor of endemic goitre on the one hand, or of Graves's disease on the other. Other types of goitre in addition to those given are toxic adenoma, exophthalmic goitre, malignant goitre, and thyroiditis. Goitre may also be classified according to the pathology of the thyroid—for example, parenchymatous, colloid, adenomatous, cystic, fibrous, inflammatory, parasitic, and malignant, and goitres of the exophthalmic type. There are a number of signs and symptoms for distinguishing between all these types. Two tests are known which help to clinch the diagnosis in cases where one is doubtful of Graves's disease. The two tests are the adrenaline test and the quinine test of Bram. The former test is well known. The principle of Bram's test is that cinchonism is not caused in cases of Graves's disease by the exhibition of quinine.

Causes of Goitre.

The chief causes appear to be: (1) infective; (2) physiological, associated with an upset of glandular balance; (3) heredity; (4) strain and anxiety in the case of Graves's disease; (5) lack or excess of certain constituents in water and food or even the air, such as iodine.

I have not time to go fully into this question, but I will refer to the work of McCarrison, Lenhart, Otto Stiner, McClendon and Williams, Marine and Kimball, Cantaro, and other workers. At the recent meeting of the Royal Sanitary Institute at Derby Dr. Turton mentioned the association of goitre with water supply of a chalky nature. The balance of evidence appears to be that water pollution is associated with colloid goitre; the lack of iodine as a cause is debatable. In the investigation I made in Bath regarding goitre, pollution of water supply and verminous conditions appeared to be the chief factors at work in an outbreak in one school. Those interested in the question should read McCarrison's account of the outbreak at Sanawar, Northern India, and other details of his work; also Crotti's account of the causation of goitre and Sir James Berry's article in the BRITISH MEDICAL JOURNAL, December 5th, 1925.

Regarding heredity I submit details of a family in which goitre occurred for several generations.

Mrs. W., aged 59, had a large goitre, unilateral and vesicular in type. She has two children, a son with no goitre, and a daughter who is goitrous.

Mrs. W.'s mother had goitre and Mrs. W.'s mother's six sisters all had goitre. Mrs. W.'s mother had five brothers, none of whom had goitre.

Mrs. W.'s father had not got goitre. Mrs. W.'s mother had goitre, but her mother's father did not have goitre. Mrs. W.'s mother had five sons and five daughters. All the daughters had goitre but none of the sons. Among the sons' children five had goitre—all the girls; three had not goitre—the three sons. The daughters had eight children (seven girls and one boy) all of whom had goitre.

It would appear that goitre is the opposite to haemophilia, the disease occurring chiefly in females, although males may transmit it.

Prevention.

Regarding prevention, the chief means I desire to emphasize are—that infection, particularly alimentary infection, must be prevented by such means as seeing that there is a clean and satisfactory water, milk, and food supply, and that the population has a diet which contains the minimum of iodine necessary for the thyroid gland's needs (cruciferous vegetables of various kinds in particular); that there must be prevention or remedy of ear, nose, and throat diseases in children, and the prevention of overstrain, physical and mental, particularly the latter, and care after debilitating diseases. Attention must be given also to any upset of glandular balance, especially at adolescence and before and after childbirth.

Additional preventive treatment would include the recommending of a special diet containing vitamins and cod-liver oil (which contains iodine in minute quantities); cleanliness of habits; fresh air and sunshine; and removal of focal infections.

Treatment.

Iodine in some form is very beneficial; among 65 cases treated in Glossop I found 16 were cured, 36 greatly improved, and 13 unchanged. Of the unchanged cases some had been only a short time under treatment. Very careful examination had been made of all the children treated, and no symptoms of Graves's disease had been found to follow the exhibition of iodine. The removal of septic conditions was also found very helpful. A great many other medical men in America and on the Continent, as well as in England, have found iodine to be very curative. It is necessary, however, to keep the children treated under close observation, as in some instances exophthalmic symptoms have been noted to follow it. At Glossop the children are examined once a week; the following procedure is adopted. In the first instance a complete medical examination is made, and matters such as length of residence in the district, sanitary conditions and water supply, diet, etc., inquired into. After this the child is weighed weekly, and the circumference of the neck over the thyroid taken. Each child is then examined carefully for signs of incipient Graves's disease as follows; tremor is looked for by making the child stand on tip-toe with extended arms and the fingers separate one from the other; the pulse is taken, and then the child takes twelve jumps and the pulse is recorded again and counted each quarter-minute for at least forty-five seconds after; von Graefe's and Möbius's signs are also looked for. In hyperthyroidism the pulse is rapid and is not accelerated by exertion. The fine intention tremor and the other signs might also be found. Dr. Brewer, school medical officer for Swindon, gives in his annual report minute details of examination on these lines, and his results should be read by everyone interested in goitre in childhood. Treatment must also include the removal of any cause. There are, of course, other methods of treatment, such as x rays and the giving of thyroid gland.

Summary.

Goitre is not nearly so prevalent in Derbyshire now as in former years.

The beginnings of exophthalmic goitre should always be looked for in the case of the enlarged thyroids of childhood.

In Glossop in a population of 20,000 there were in round figures 12 cases of severe exophthalmic goitre and 24 of a mild type, and the deaths per year average about 0.6. These figures relate to all ages and sexes. This death rate is slightly higher than that for England and Wales.

I would like to point out also that it is highly desirable that the gap in the Insurance Act left between the ages of 14 and 16 ought to be removed, so that boys and girls will have more medical care on leaving school. The age of adolescence is a critical age for goitre as well as other diseases. In Glossop we tried to emphasize to parents the need for treatment of thyroid enlargement after leaving school.

In conclusion, owing to the association I had found of rheumatism with goitre, I would like to suggest to the British Medical Association committee investigating rheumatism that this point might be worth inquiring into.

—namely, (1) a lead-soluble water supply to be one of the causes of nephritis in childhood; (2) that in my own district, which in addition to having a lead-soluble water supply has a very damp climate, the death rate of this disease was about twice that in England and Wales. Coming to the question of goitre, I consider it under various headings: its incidence as regards age, sex, and locality; conditions associated with goitre; the types of goitre; then causes, prevention, and treatment. I have only time, however, to deal very briefly with the subject.

Incidence.

I append details of result of the routine examination of 1,870 children in Glossop.

Incidence of Goitre among Glossop Children examined at Routine Inspection, 1924 and 1925.

	No. Examined.	Had Goitre.
Total boys and girls	1870	96 = 5.1%
Total girls	937	75 = 8.0%
Total boys	933	21 = 2.2%
Girls aged 12 years	205	36 = 17.59%
Boys aged 12 years	187	8 = 4.2%
Girls aged 13 and over	104	27 = 25.9%
Boys aged 13 and over	108	10 = 8.4%
Boys and girls under 9	1143	9 = 0.9%

The percentages are for the respective groups examined.

From this table, as regards age of incidence it will be seen that under 9 years of age only 0.9 per cent. of children had goitre, whereas 8.4 per cent. of boys of 13 and 25.9 per cent. of girls of 13 had goitre, showing clearly the greater prevalence of goitre during adolescence and the greater prevalence in girls. At Bath out of 7,025 children examined a similar result was obtained. No boys under 9 years of age have been found there to have had goitre of 2,020 examined; 20 girls out of 1,904 examined had goitre; of these 20 girls, 9 were between the years of 8 and 9, at which age 748 girls were examined. Now as regards the meaning of goitre: in the above examinations at Glossop, children with visible thyroid enlargement were counted as having goitre. At the examinations at Bath only children with visible thyroid enlargement *plus* alteration of the contour of the neck or with symptoms were counted as having goitre; I found by a control examination at Bath that to compare the Glossop and Bath results it would be necessary to multiply the Bath figures by four.

Sex.

The table given shows also the prevalence of goitre as regards sex. The percentage of boys of 13 affected was 8.4, as compared with 25.9 of girls of the same age—that is, roughly about three times as many girls as boys were affected at Glossop. At Bath the incidence among 7,025 children examined was the same—that is, 1.5 per cent. of girls to 0.5 per cent. of boys, or 3 girls to 1 boy.

Locality.

I now come to locality, and give you herewith details of the prevalence of visible thyroid enlargement at 12 years of age in various districts in England and Wales. These figures are by no means complete, and I do not wish to labour the point, as Sir George Newman, chief medical officer of the Ministry of Health, will shortly be reporting fully on the matter.

Percentages of Visible Enlargement of Thyroid Gland at 12 Years of Age in Various Districts, 1924.

	Girls.	Boys.		Girls.	Boys.
Glossop	17.5	4.2	Ripley (urban)	23.1	30.3
Bath	7.3	2.2	Heanor (urban)	15.4	9.3
Lancashire	12.5	6.3	Clay Cross (urban)	3.4	4.5
Gloucestershire	5.7	1.3	Blackwell (rural)	2.7	0.7
Nottinghamshire	13.3	4.7	Bakewell (rural)	7.2	2.3
Derbyshire	11.87	5.15	Shardlow (rural)	12.1	4.1
Wirksworth (one school)	57.0	50.0	Essex	0.81	0.04
Ditto	35.0	21.0	Batley	5.1	3.9

At Margate goitre was almost unknown.

The table shows, however, that while at Margate and in Essex goitre is almost unknown, in Derbyshire there is an incidence of 11.8 per cent. girls and 5 per cent. boys; Nottinghamshire 13.3 per cent. girls and 4.7 per cent. boys; in Glossop 17.5 per cent. girls and 4.2 per cent. boys; in Wirksworth 57 per cent. girls and 50 per cent. boys (in one school); in Ripley 23.1 per cent. girls and 30.3 per cent. boys.

Taking the criterion of goitre as visible enlargement of the thyroid gland at 12 years of age, it can be seen that there is considerable variation in England. Goitre shows a varied prevalence in different parts of the world. Areas of great prevalence are the hilly countries, like the Alps, Pyrenees, Himalayas, and Carpathians, also the great lake region of North America. Areas of freedom from goitre are Japan and Malaya, which, it will be noted, have a marine climate.

Associated Conditions.

Certain conditions appear to be associated with goitre. At Glossop among 1,870 children examined I found a considerable incidence of rheumatism and diseases of the ears, nose, and throat. The following table shows this.

Percentage of Certain Defects in Goitrous School Children, Compared with Percentage in all Children (Goitrous and Non-goitrous), examined in 1925 and in 1924 and 1925.

Disease or Defect.	Goitrous Children (120) Percentage.	All Children in 1925 (920).	Percentage in 1924 and 1925.*
Nose and throat	32.2	15.0	14.0
Otorrhœa	1.6	0.3	0.4
Rheumatism (includes "growing pains")	25 0	5.5	
Chorea	0 8	0.1	0.3
Mentally defective	5.8	0.7 (among 2765)	
Heart disease (functional and organic)	15.8	16.1	13.3
Definite and suspect phthisis	1.6	1.1	1.7
Definite and suspect tuberculosis of glands	1.6	0.5	0.5
Dental decay (2 bad teeth and over)	28.3	31.3	

* Total examined 1924-25, 1,870.

This table shows that diseases of the nose, throat, and ear have a much greater incidence in goitrous children than in all children (goitrous and non-goitrous), 32.2 per cent., as compared with 14. Rheumatism is also much more prevalent in goitrous children, 25 per cent. having rheumatism.

The incidence of rheumatism in the above table (25 per cent.) is startling. It must be noted, however, that rheumatism in this examination included "growing pains" as rheumatism. Of all children examined in 1925, 5.5 per cent. had rheumatism; this figure is perhaps higher than one might expect. Diseases of the ear, nose, and throat were present in 32.2 per cent. of goitrous children and 15 per cent. of all children. Mental defects were found in 5.8 per cent. of goitrous children and 0.7 per cent. of all children. In the beginning of this year I made an independent inquiry regarding rheumatism. In this inquiry I included children who had small fibrous nodules (as described by Dr. Carey Coombs of Bristol and Drs. Thomas and Coates of Bath) as rheumatic. Among 264 girls (of all ages) examined I found 19 had goitre, and among 273 boys examined 9 had goitre. Of all the children (goitrous and non-goitrous) 37 girls, or 13.9 per cent., had rheumatism, and 36 boys, or 13.1 per cent., had rheumatism. Among the goitrous children, of the 19 girls 5, or 26.3 per cent., had rheumatism, and of the 9 boys 33.3 per cent. had rheumatism.

Types of Goitre.

The chief types of goitre seen in childhood are simple parenchymatous and puberty hyperplasia. These two types have a negative and a positive phase—that is, there are hypothyroid symptoms associated with the goitre on the one hand, and hyperthyroid ones on the other. The hypothyroid conditions are mental dullness, dry skin and hair, chilblains, bed-wetting, and other well known conditions associated with hypothyroidism. Hyperthyroidism included conditions

of the conditions of medical practice and nursing in these days. Many other examples might be quoted, but it is sufficient evidence of the haphazard character of the relief of the necessitous and the state of curative and preventive services in those times.

Little, if any, improvement is to be noted as time went on until early in the nineteenth century, when, after industrial conditions in various directions had gradually become more and more difficult, the attention of the Government was forcibly directed to the necessity of action in regard to the poor. Meanwhile, too, extreme abuses had crept into the administration of the Elizabethan Poor Law in various directions, including the provision for the sick poor in workhouses. A Royal Commission was appointed and reported in 1832, and as an example of the condition of affairs may be mentioned their description of the state of the workhouses in the small pauperized parishes as deplorable, and of the condition of the sick poor therein as leaving much to be desired. They say, "the sick were housed with prostitutes, ex-gaolbirds, tramps, and other characters of the worst description, and their sufferings were not infrequently aggravated by the incessant ravings of some neglected lunatic." For such attention as they received they were apparently indebted to the care of less disabled paupers.

The Poor Law Amendment Act of 1834 was the outcome, and under it the care of the poor was spread over a wider area, the union of parishes with a workhouse in common, while each parish was still responsible for the expense of its own poor up to 1865.

Such is, very briefly, the history of the care of the poor up to the middle of the nineteenth century—up to the time of the Reformation a voluntary charge of the Church, then deterrent legislation, next still harsh parochial relief, and finally systematized charge spread over a group of parishes. Now the problem gradually assumed a different character from the gradual change in the social outlook, progressing with extraordinary rapidity towards the end of the nineteenth century, and especially in the past twenty-five years. As a result public opinion has led to consideration of the matter from various points of view, and amongst the more important of the bodies issuing reports on Poor Law reform may be mentioned:

1905. Royal Commission on the Poor Laws and Relief of Distress (reporting in 1909).
1908. Royal Commission on the Feeble-minded.
1909. Report of the Local Government Board on social conditions.
1911. Committee of the County Councils Association.
1918. Committee of the Ministry of Reconstruction.
1926. Memorandum of the Ministry of Health on proposals for Poor Law Reform.
Royal Commission on National Health Insurance.
County Councils Association.
Association of Poor Law Unions.
Still sitting—Royal Commission on Local Government.

There is general agreement among all of them that responsibility for the care of the poor should now be spread over a much wider area, and that the direction in which the change should be made is that the charge should be laid on the authorities—county and county borough councils administering the invading social services which embrace already so much of the work of the present relief authorities.

Dimensions of the Problem.

The social changes and the advance of knowledge in this time have led to two important changes in the nature of the problem, especially of the care of the sick poor. The first is the dimensions of the problem, which, as will be seen from the following table, is steadily diminishing.

	England and Wales. Population.	Paupers.
1851	17,927,609	941,315 = 5.3 per cent.
1861	20,066,224	883,921 = 4.4 ,,
1871	22,712,266	1,037,360 = 4.6 ,,
1881	25,974,439	790,937 = 3.1 ,,
1891	29,002,525	759,730 = 2.6 ,,
1901	32,527,843	777,097 = 2.4 ,,
1911	36,070,492	886,177 = 2.5 ,,
1921	37,885,242	663,667 = 1.75 ,,

In 1922 there was a sudden increase in the proportion of persons in receipt of Poor Law relief to 3.8 per cent., and in the four past years it has averaged 3.7 per cent. It would, however, be unduly pessimistic to regard the present unfavourable conditions as other than temporary in character.

The second change is the development of social legislation and services which have invaded the province of the Poor Law and have helped to some extent in the general decrease shown above; they also provide services for persons who are above the border-line of poverty. Among these developments may be mentioned:

1897 Workmen's Compensation Act and subsequent Acts.
1902. Provision for midwifery services under Midwives Act.
Early in twentieth century—Maternity and child welfare schemes.
1906. Meals for necessitous school children.
1908. Medical inspection of elementary school children.
1908. Old age pensions at 70 years of age.
1911. National Insurance Act.
1911. Unemployment Act.
1912. Schemes for the treatment of tuberculosis.
1913. Mental Deficiency Act.
1914. Pensions for disabilities of the great war.
1918. Treatment of venereal disease.
1918. Payment of medical fees for assistance to midwives.
1920. Blind Persons Act.
1926. Widows', Orphans', and Old Age Contributory Pensions Act.

All of these are of importance and some of them have not yet reached their full development; the most far-reaching is National Health Insurance, of which fuller mention is made later.

Medical Relief.

The general lines of the development to the present stage of the relief of the necessitous have been set out to show the character of the problem and the natural lines of progress, which have changed from time to time but always in the same direction from the time at which the State first assumed responsibility in the matter—a wider basis, the present stage reached being that of the union area. But, in the course of this progress, "medical relief" is a very late development, and as the Royal Commission of 1905 reported—

"the absence of reference to Poor Law medical relief in the early statutes is due in great measure to the reliance placed on voluntary association for medical relief. The hospitals received patients from the parish at fixed charges and patients generally were charged for indoor treatment. There was also a number of dispensaries in the metropolis and elsewhere."

It must also be remembered that even so late as 1858 medical practice itself was by no means clearly defined and only assumed a recognized status after the passing of the Medical Act of that year. Thus, the Royal Commission of 1905 reported to the following effect. There was no provision for a system of medical relief under the Act of Elizabeth, and even the Reform Act of 1834 did not specifically provide for a system. The Act of 1848, however, required provision to be made for medical or other assistance on account of accident, bodily casualty, or sudden illness, but it was not until 1868 that the Local Government Board had specific powers to order a board of guardians to provide surgical and medical appliances in a workhouse. Up to that time it was left to boards to make such provision as they saw fit, and from the agitation in the middle of the nineteenth century it would appear that there is grave reason for thinking that the medical care was far from satisfactory. The term "medical relief" first appears in an Order of 1842, and seems at first to have been limited to medical attendance and the usual bottle of medicine which accompanied a doctor's visit at that time. This attendance also varied according as the medical officer possessed a degree in medicine or surgery or both. They go on to say that indoor medical relief, administered under the purely deterrent principle of the workhouse system, ended in failure and was abandoned in 1867 in favour of a system in which curative treatment became the dominant principle. From that time, largely as a result of outside pressure, the standard of the care of the sick poor rose, and by the end of the nineteenth century there was little cause for serious complaint from the humanitarian standpoint, though much more was possible had full advantage been taken of medical progress.

A very interesting reference is made later by the Royal Commission of 1905 to a circular of the Poor Law Commissioners issued in 1836 and brought up to date in their

DISCUSSION.

Dr. L. A. Parry (Hove) thought that the enormous variation in the figures given by Dr. Milligan as to the incidence of goitre in children—varying from practically *nil* in Essex and Kent to over 50 per cent. in Derbyshire—must be due to something more than mere locality, although this undoubtedly was one of the factors. In this, as in so many other investigations, the personal factor, the mentality of the investigator, must be largely concerned. Inquiries on other clinical matters had revealed the same discrepancies in figures by different observers. He agreed that the iodine treatment was the best, and had been very successful.

Dr. M. E. Pope (New South Wales) gave the results of some investigations in New South Wales. It had been found that goitre occurred in the hilly districts, while hot, dry plains and seaports were free from the disease.

Dr. H. Barber (Derby) doubted if rheumatism was associated with goitre. Mitral stenosis or evidence of chronic valvular disease was not found in later years. Goitre was still very prevalent in Derbyshire, and he was not sure that it was decreasing at all. The public health authorities should work at the water supply rather than at giving iodine, if, as seemed probable, the water supply was at fault. There was no doubt whatever that locality was very important in relation to goitre. It was prevalent in hilly districts far from the sea.

Dr. H. W. Pooler (Stonebroom, Derbyshire) thought there was still a very great deal of goitre in Derbyshire, far more than he had observed during a long professional career in Birmingham; and he was not sure that the disease was decreasing. Fewer large unsightly wens were seen. He believed that there were many cases showing signs of derangement of function without obvious thyroid disease; this applied to hyper- as well as hypo-thyroid symptoms. Evidences of hypothyroidism could be seen in many children in the villages, ranging from mild forms with thinned coarse hair, thickened lips or alae nasi, or flattened noses or lessened mental alertness, to imbecility and full cretinism. In adults such conditions as nervous excitement, tremor, palpitation, etc., were frequent, without obvious thyroid enlargement. He could not recall seeing any case of hyperthyroidism in a child under 14 years. He believed the conditions to be due to iodine deficiency, caused by remoteness from the sea. Preventive measures suggested were the administration of iodized table salt, chocolates, or water. Iodized chocolate was much too expensive; iodizing the water supply, in view of the fact that so small a proportion of the water was used for drinking purposes, was wasteful; the best method seemed to be the use of iodized table salt.

Dr. Milligan, in reply, referred to the doubts as to the decreasing incidence of goitre in Derbyshire; he had it from Dr. Nelson of Glossop, who had practised there over thirty years ago, that there had been a great decrease in the number of cases seen and the severity of the disease; Dr. Turton, speaking at the Royal Sanitary Institute meeting in Derby this year, had also expressed a similar opinion; he believed credit must be given to the late Dr. Barwise for improving the quality of water supplies in helping to effect this diminution. Regarding rheumatism and goitre, he had counted as rheumatic children who had growing pains, and in the second investigation children also who had fibrous nodules. One speaker had expressed doubts as to the reliability of percentages of goitre; Dr. Milligan said the examination was made on an agreed basis and by skilled observers; he himself had also carried out investigations in the south as well as the north. In reply to the President, Dr. Thursfield, he entirely agreed that exophthalmic goitre was rare under 14 years of age; the figures he gave (36 mild and severe cases among 20,000 persons in Glossop) referred to all ages and sexes. The point he wished to make was that thyroid enlargement might lead to exophthalmic goitre later in life as well as to endemic goitre, and the premonitory signs of both should be carefully looked for.

SECTION OF PUBLIC HEALTH.

William J. Howarth, C.B.E., M.D., D.P.H., President.

DISCUSSION ON POOR LAW REFORM AND PUBLIC HEALTH.

OPENING PAPERS.

I.—J. MIDDLETON MARTIN, M.D.Camb., D.P.H.,
County Medical Officer of Health, Gloucestershire.

Introduction.

The problem of the so-called Poor Law is the care of a section of the community which, for one reason or another, is unable to provide independently for its maintenance or, in times of illness, for the special circumstances arising therefrom, including medical care. It is a problem that has existed from the earliest times, but the nature of the problem has varied in changing social conditions. Broadly speaking, there have been four marked stages: (1) Pre-Reformation. (2) Early Reformation. (3) Industrial revolution. (4) Period of social development.

In pre-Reformation times the community as such took little, if any, heed of the needs of the necessitous, and what was provided was given by the monasteries and clergy. As Sir Francis Hyett observes in his *Gloucester in National History*:

> "Work which is now done by universities and education committees, by boards of guardians, by philanthropic associations, or by individual effort, was then done exclusively by the monastic orders. For three centuries the pursuit and diffusion of knowledge was the prerogative of the Church. Statesmen and lawyers, architects and artists, schoolmasters and agriculturalists, and craftsmen, were trained in the cloister. It was monks who collected, preserved, and multiplied books, who built churches, who made roads, cut down forests, drained fens, and tilled the lands which they reclaimed. It was they who, by a systematic distribution of charity, saved the poor from starvation without the intervention of the State, and who maintained hospitals and dispensaries without subscription lists, and while they aided the onward march of contemporary civilization they have left us some priceless legacies."

In addition, the stationary poor seem to have had some sort of a legal claim on lords of manors.

Evolution of Present-day Poor Law Services.

In the middle of the sixteenth century there was a great upheaval of the whole social system occasioned by the Reformation, and immediately the problem of the care of the necessitous was forced on the Government of the day by their very existence and the loss of the assistance previously given by the monasteries. As a result the first Elizabethan Poor Law Act of 1553 was passed requiring "that contribution towards the relief of the impotent poor should be leviable on every competent person"—the beginning of the now well known system of rates. It was not long before amending legislation proved to be necessary, and in 1601 was passed the great charter of this branch of English law—the Poor Relief Act of 1601, which formed the basis of all Poor Law legislation for two and a quarter centuries, and a good deal of which is even now actively in force. The unit of administration was the parish.

Up to this period legislation had been very severe and repressive in character, and had failed in its purpose of reducing destitution. The new legislation was based on more humanitarian principles, though more or less deterrent treatment still obtained for the able-bodied. From time to time the problem was forced on the attention of the Government from another aspect by the epidemics of infectious disease occurring at different periods of history, and as a special example may be mentioned the Great Plague of the middle of the seventeenth century, so graphically described by Mr. Walter G. Bell. A particularly interesting side of the subject for present purposes is the evidence of activity while danger was existing, the waste of effort in the way remedy was applied, and the fading away of the lessons as soon as the immediate danger was over—but one example of many in the history of our country. Mr. Bell's account of the Plague in London is also specially interesting from the picture which he draws

cent. attend Poor Law persons. These proportions are particularly mentioned to show that it would not entail very great changes if some arrangement were made whereby domiciliary medical attendance on Poor Law persons were distributed among all doctors willing to accept them as they do insured persons. Indeed, it would appear that the time has arrived when the anticipation of the Royal Commissioners of 1905 (made three years before the National Insurance Act) may well be realized—namely, "we hope that, ultimately, it may be possible to dispense altogether with the service of the district medical officer and that his duties will be shared among medical men practising in the district."

This course would have great advantages over the present arrangement and would put the 8,500 so-called Poor Law persons on the same footing as the 140,000 insured persons, and would remove once for all the distinction or stigma of "Poor Law" so far as medical assistance is concerned.

In putting such a proposal into operation there are two practical difficulties. The first is the varying periods for which persons on the border-line of necessitous would require medical care, and the second is the distribution of the funds available for such care. Both these difficulties are, however, of a diminishing quantity, as the probability is that, with the full development of health insurance, the number requiring what is at present called Poor Law medical assistance will decrease; as an example it may be mentioned that an insured person is entitled to medical benefit on the insurance basis when he ceases to be an insured person and becomes an old age pensioner, in future at 65 instead of 70 years of age, and the remuneration for such medical attendance is provided from insurance funds, presumably including the share of the State contributions. Also it is to be noted that the "lives" in question are less satisfactory than the normal, and, if the remuneration is to be adequate, the capitation rate must necessarily be at a higher rate than that for insured persons. A possible manner of meeting all these difficulties would be somewhat as follows:

1. The total sum set aside for domiciliary treatment for these persons would be pooled—say, A pounds.
2. "Orders" for attendance on individuals issued by officers of the Public Assistance Authority (whatever the new authority may be) would be given to the individuals, who would choose their own doctor, the "Orders" totalling for the year, say, B.
3. The numbers of persons attended by the respective doctors will be *a*, *b*, *c*, *d*, etc.
4. At the end of a quarter or year the capitation fee available will be A pounds divided by B persons—say, C shillings.
5. The payment to each doctor will be this figure (C) multiplied by *a*, *b*, *c*, *d*.

In this way the whole amount available for medical attendance will be distributed among the doctors giving the services.

An effort has been made to calculate what the capitation rate would be at the present cost of Poor Law medical services, based on information kindly supplied by Poor Law medical officers in the county. From the return of August 4th, 1925, to the House of Commons the persons in receipt of relief on January 1st, 1925, were distributed as follows:

In institutions:		
Mentally ill	1,300	
Physically ill	603	
		1,903
Others		1,118
Total in institutions		3,021
At home:		
Mentally ill	87	
Physically ill	2,085	
		2,172
Not ill—general	2,821	
Unemployment	486	
		3,307
Total at home		5,479
Grand total		8,500

The total amount of the present salaries of medical officers is £5,200, and this sum distributed over 5,479 persons gives an average of approximately nineteen shillings per head, or about double the present capitation rate. From the further information supplied by the medical officers about one-ninth of the persons are under medical attendance at any one time; though certain information is not available, it would appear that the attendance required by this group of persons is not so greatly in excess of that given to insured persons as is generally estimated. It would, therefore, appear to be practicable to arrange a system of domiciliary medical attendance on a plan which would avoid any distinction from the ordinary population, and to give the individuals the choice of doctor.

In-patient Treatment.

There are in the workhouses in the county about 560 beds for sick persons, and there is also a number of beds (on the same proportion, about 120) for Gloucestershire persons in workhouses outside the county—a total of about 680. Nearly double this number of beds is available in—

Three general hospitals	308	
Three special hospitals	69	
Thirteen cottage hospitals	172	
		549
Infectious disease hospitals		450
Tuberculosis:		
Sanatorium	175	
Advanced beds	36	
		211
		1,210

Presumably the present accommodation in the workhouses is sufficient in quantity, and in three of them at least, with 309 beds, is excellent in quality. Probably the remainder of the accommodation cannot be regarded as satisfactory in view of modern requirements and may need replacement. To particularize one special class of case for which beds are necessary, additional accommodation for maternity cases is required, especially in view of the housing conditions of both town and country. Some accommodation for them is already provided in the maternity wards of district nursing homes and in certain cottage hospitals, and the care of all these cases requiring special provision should be arranged in extended accommodation at the homes and hospitals.

The replacement of other Poor Law infirmary accommodation which is unsatisfactory should be undertaken gradually, and it would appear that the most satisfactory alternative provision should also be found in extensions of existing cottage hospitals and in the establishment of new ones in other parts, in many of which they are desirable for other purposes. This course would have the two great advantages of relieving the beds in general hospitals of prolonged cases and enabling more patients to have the special services available in the general hospitals, and, secondly, of removing entirely the distinction or stigma of the Poor Law from patients so treated.

Consultant Service.

The next requirement—a new service—is to ensure arrangements whereby consultant advice may be available as required and whereby patients in need of special treatment may proceed to the appropriate place without delay. As examples of the former may be mentioned examination by an ophthalmic surgeon and the provision of glasses, so necessary for the comfort of old persons as presbyopia comes on with age, and, of the latter, admission to hospitals for operation. The scheme for the extension of medical services in Gloucestershire makes it readily possible to put such a proposal into operation immediately, and may be given as an example of a method in which the necessary arrangements can be made at a reasonable cost.

Drugs.

The supply of drugs by chemists or, in distant parts, by doctors, on the lines of the insurance service, could readily be arranged.

Nursing.

A very important further domiciliary assistance is nursing care. Gloucestershire is very fairly covered by district nursing associations and already they provide services for the county council. It would involve a comparatively slight extension of the present arrangements of the council to include general provision of this valuable assistance to Poor Law persons, similarly in a manner which would involve no distinction of class.

own Report. "Medical relief was to be given only in cases of actual destitution, and every endeavour was to be made to induce the labouring classes to join sick clubs or friendly societies." The numbers given for three years are:

	Societies.	Members.	Paupers.
1803 ...	... 9,672	 704,350	 1,039,716
1815 ...	... ?	 925,439	 895,993
1904 ...	... ?	 5,700,000	 932,000

Two further observations of the Commissioners may be quoted—one as a sign of the conditions of the past and the other as to their views for the future. The first is that "originally the remuneration of the medical officer was fixed by open tender," which was abolished by the General Medical Order of 1842. The second is: "We hope that, ultimately, it may be possible to dispense altogether with the service of the district medical officer and that his duties will be shared among medical men practising in the district."

Meanwhile, there had been steadily growing appreciation of two very important principles: (1) that illness and disease were important causes of pauperism, and (2) that much illness was preventable by improvement in social conditions. Many individuals might be named as pioneers in this development of knowledge, and the British Medical Association took an important share in bringing the matter before the public and the Government. A joint committee of that Association and the Social Science Association memorialized the Government in May, 1868, and as a result Mr. Disraeli appointed a Royal Commission under a Royal Warrant issued on November 24th, 1868. That Commission reported in 1871, and from the time of their report began the long series of public health legislation leading to the very wide developments of the present day. Of these health developments the most far-reaching in many respects was the National Insurance Act of 1911, the full possibilities of which have not even yet been realized.

The history of the care of the poor has been outlined—very sketchily it is true, but as fully as a paper of this character will allow—to indicate the lines on which it has developed, to show the fact that the apparent state of stability it has reached is but a stage in that development, and lastly, because its history tends to show the natural lines for further development at the present time.

The Problem in a County Area.

Before setting out suggestions in detail it is now desirable to consider the dimensions of the problem, and as an example the circumstances of a county area such as Gloucestershire, with a population of about 380,676, will be considered. The existing social services in addition to the "Poor Law" have been set out above and give some indication of the extent to which the province of the Poor Law has been gradually invaded.

Domiciliary Service.

In the county are fifteen boards of guardians with fourteen workhouses responsible for the poor amongst a population of 313,234, of which 3,959 are resident in adjoining counties; the Poor Law authorities for the remaining population of 71,401 are eight boards of guardians in adjoining counties.

The medical services and agencies available for the population of 380,676 are:

Groups:	Population.	Services.
Insured persons ...	140,000	General domiciliary medical attendance; about half of number see doctor during any year.
Dependants	188,000	
Others	52,500	
Local medical clubs (no detailed information).		
Poor Law	8,500	Domiciliary medical attendance (about one-third under treatment at any one time) and infirmaries.
Asylum patients ...	1,276	In-patient treatment.
School children ...	50,000	Treatment of a few conditions, more particularly defects of sense organs and air passages, and skin diseases and teeth.
Tuberculosis... ...	Whole population.	Dispensary and sanatorium.
Venereal diseases ...	,, ,,	Out-patient and in-patient at hospitals.
Maternity and child welfare	,, ,,	Very limited treatment.
Cripples	,, ,,	A few cases only.
War disabilities (numbers unknown).		

Agencies:	No.	Beds.
Hospitals—		
General	3	308
Special	3	69
Cottage	13	172
	19	549
Poor Law...	14	700 (about)
Infectious diseases	17	450 (about)
Tuberculosis:		
Sanatorium...	... ...	175
Advanced beds	... ...	36
Nursing homes	10	50
Medical practitioners (practising) ...	212	
Dentists	40 (about)	
Nurses—district	140 (about)	
Ambulances	5	
Bacteriological and pathological laboratory: Very limited and incomplete.		

It will thus be seen that for the 8,500 Poor Law persons there is available, in addition to the services of the Poor Law medical officers, treatment arrangements for many under one or other of the agencies set out in the above table. On January 1st, 1925, the distribution of the 8,500 persons in receipt of Poor Law relief was:

Number suffering mentally:		
In institutions	1,300	
At home	87	
		1,387
Number suffering from sickness, infirmity, etc.:		
In institutions	603	
At home	2,085	
		2,688
Number not so suffering:		
In institutions	188*	
Other persons	785	
		973
Number not so suffering at home:		
Widows and wives apart	403	
Children	1,140	
Others	1,278	
		2,821
Relief on account of unemployment:		
Men	134	
Women	115	
Children	237	
		486
Casuals		145
		8,500

* Children in specialized institutions.

For the purpose of estimating the medical assistance required, this table may be concisely summarized as follows:

			No.	Per cent.
Mentally ill			1,387	16.3
Physically ill:				
In institutions	603		.....	7.1
At home	2,085		.....	24.5
		2,688	.....	31.6
Not ill		4,425	.....	52.1
		8,500		

With a view to obtaining exact information as to the numbers of sick persons undergoing treatment at any one time an inquiry was made of Poor Law medical officers in the county as to the cases in the infirmary and under treatment in their homes on January 24th, 1926, but not necessarily visited on that day, and as to the accommodation available for in-patients. The summary of the replies is:

Population	309,275
Workhouses	14
Total beds	2,145
Infirmary beds	715
Infirmary patients	561
Patients under attendance at home	750*

*About 11.5 per cent. of total Poor Law persons.

As regards the nature of the illness, information was given with respect to 413 in-patients and 565 patients in their homes. It is unnecessary to set out the results in detail, but it may be briefly stated that medical attendance was required mostly on account of senility (about one-fourth of the whole), respiratory disease, largely of a chronic character (one-sixth), and diseases of the nervous system—paralysis and mental defect (about one-seventh); a total of over one-half of the cases. It is somewhat surprising to note that of 978 patients only 57 were having attention for heart disease and only 24 for malignant disease.

Of the 252 medical practitioners in the county 212 are in practice; of these, 174 are insurance practitioners and 75 are Poor Law medical officers—that is, of all the practising doctors 82 per cent. attend insured persons and 35 per

Council as supervisory and the Metropolitan Borough Council as executive—might between them evolve a scheme much less complicated.

(*d*) *Venereal Diseases.*—Though these diseases constitute, as a group, a factor of first-class importance to the public health, the borough authorities have no part in the scheme for their treatment, etc.

(*e*) *Vaccination.*—Whilst vaccination is closely associated with the prevention of infectious disease, for which borough councils are primarily responsible by statute, Poor Law guardians are responsible for operating this measure of prevention. Experience has shown that the authority responsible for the prevention of the spread of infection of small-pox should be the body responsible for operating such an important preventive measure as vaccination. The Public Health (Smallpox Prevention) Regulations of 1917 do enable the borough medical officer of health to vaccinate persons who have been in contact with small-pox patients, but vaccination is a service which should be entirely transferred to the metropolitan borough councils.

(*f*) *General Sanitation.*—Without going into details, mention may be made of the overlapping of jurisdiction of the county and borough councils in connexion with the Housing Acts, common lodging-houses, slaughterhouses, and cowhouses. The same remark applies to matters affecting public health connected with theatres, cinemas, and other places where the public congregate.

(*g*) *Registration of Births, Deaths, and Marriages.*—It is an anomaly that Poor Law guardians, whose primary duty is to relieve distress, should be responsible for the registration of births, deaths, and marriages amongst all members of the community. This duty should be transferred to metropolitan borough councils and controlled from the local town halls.

(*h*) *Outdoor Medical Relief.*—This service, now under the control of the Poor Law authority, is very closely wrapped up with the maternity and child welfare work of borough councils and the medical work of national health Insurance Committees. The duty of giving outdoor medical aid to those in distress would be simplified if the responsibility were transferred direct to the borough councils. The relieving officers should be placed under the control of the borough councils; they could secure the admission of persons to residential institutions for the poor in the manner now followed when officers of borough councils arrange for admission of patients to hospitals of the Metropolitan Asylums Board.

(*i*) *General Medicine.*—In the administration of medical treatment, maternity benefit, etc., provided under the Insurance Acts, and medical relief, care of children, etc., provided by the Poor Law, the borough councils have no part, nor are they in a position to obtain any information as to lunatics, mental defectives, and inebriates, though these and other subjects are usually regarded as parts of the general medical services, and are of high importance *qua* public health.

It will be obvious that the time has arrived when an amendment of the somewhat complicated system of local government administration in London is desirable.

The Minister of Health has recently issued provisional proposals for Poor Law reform for circulation to the various bodies concerned as a basis for consideration and discussion. The proposals for the country and for London are in the main almost identical, but in view of the widely different administration a separate set has been issued for London. Although the Minister's proposals are intended primarily to indicate a suggested method of reform of the Poor Law, they aim at securing simplification of the whole of the health administration work carried out by the various local authorities operating in London. The proposals contemplate that the London County Council will undertake for the whole administrative county—

(*a*) The general oversight of the administration of all health services, and the duty of acting in place of a metropolitan borough council declared to be in default of any of these services.

(*b*) The complete responsibility for outdoor relief (including domiciliary medical relief).

(*c*) The control of all residential institutions transferred under the reform scheme from the Poor Law authorities to the county council.

(*d*) The services at present maintained by the Metropolitan Asylums Board.

(*e*) The duties in connexion with vaccination now undertaken by the Poor Law authorities.

It is also proposed that certain anomalies of historic origin, such as the association of registration of births, deaths, and marriages with the provision for the relief of the poor, should be corrected, and it is intended that there shall be an improved correlation between Poor Law relief and unemployment benefit.

It is a principle which will generally be accepted by those intimately concerned in public health work that so far as the health of the individual is concerned the best results are only to be obtained if he remain under the supervision of one single authority throughout the course of his life. The transfer of supervision, as at the present time, from the "maternity and child welfare" authority to the "education" authority, later to the "insurance" authority, and in times of distress or when suffering from infectious illness to the "Poor Law" or "fever" authority, affects adversely the individual, leads to wasteful expenditure and confused administration, and interferes with the progress of each of the authorities, none of which derives the full amount of experience that might be obtained.

There is no doubt that it would be to the general benefit that public health administration should aim definitely at the establishment of a single authority in each area charged with all executive health functions; but in London, with a population of four and a half millions, this would prove a task insuperable for one body. There is, however, much to be said in favour of securing simplicity and efficiency in administration by transferring the duties of the London Insurance Committee, the Metropolitan Asylums Board, and the Poor Law authorities within the county of London to the County Council and the metropolitan borough councils. The Metropolitan Asylums Board organization and the Poor Law residential institutions should be transferred to the County Council, thus allowing one body to control the residential institutional treatment for the whole of London. The services now being carried out by the London Insurance Committee and those of a non-residential institutional character now being administered by the Poor Law authorities should be transferred to the metropolitan borough councils.

In London Poor Law institutions there are approximately 46,800 beds, and in the Metropolitan Asylums Board institutions approximately 23,000 beds. Some idea of the task which would fall on the County Council if it were called upon to control this large number of beds, in addition to continuing its present duties, can be gathered when it is remembered that the total number of beds in the voluntary hospitals in London is only 13,000.

If the London County Council were made the authority for residential institutional treatment for London it would probably be impossible for that authority to carry out satisfactorily local health executive duties of a non-residential character, and, further, it is in the interests of the health of the individual that these duties should be in the hands of the local sanitary authorities. It would appear, therefore, necessary and desirable to add to the present powers of the metropolitan borough councils by charging them definitely with the duty of carrying out all local health services of a non-residential character.

This proposal would involve the transfer to the borough councils of all non-residential executive health functions now in the hands of the London County Council, such as the school medical service, the inspection of common lodging-houses, and the supervision of midwives. Each borough council would be entrusted, in addition, with the work of the medical and other staffs (except the residential institutional staffs) of the Poor Law guardians; the registration of births, deaths, and marriages; vaccination; and the work of the London Insurance Committee within its area.

Thus in London we should have the metropolitan borough councils acting as the local health executive authorities and the London County Council as the institutional authority for Poor Law, infectious disease, and tuberculosis. The County Council would also remain the supervisory and co-ordinating authority with regard to health services generally; but it is essential that the county authority should be entirely supervisory in regard to local health matters rather than partially executive and partially supervisory. The London County Council could, in fact, act as a Provincial Board of Health for London, thus relieving the Minister of Health of much of the detailed work now falling upon him. Under these proposals the two authorities, working closely together, would operate in each area, instead of five as at present.

Dental.

The provision of dental treatment cannot be arranged so easily, largely owing to the fact that dentists are not so generally distributed as are doctors—for example, there are only 40 dentists in the same area as the 212 doctors and 140 district nurses—and, further, the dentists are to be found only in the large centres of population. It is important, however, that requisite dental treatment should be provided, and possibly the solution may be found temporarily in the appointment of peripatetic dentists who will see patients in the out-stations of the Scheme for the Extension of Medical Services.

Summary.

Shortly, the services for the "sick poor" above outlined include:

1. Domiciliary attendance by medical practitioners, as far as possible on the lines of the present insurance medical practice, which tends towards a preventive health service.
2. In-patient treatment in hospitals (at present Poor Law infirmaries), and in additional accommodation (to replace unsatisfactory infirmaries) at existing or new cottage hospitals.
3. Consultant services—for example, ophthalmic treatment.
4. Nursing assistance.
5. Dental treatment as fully as practicable.
6. Complete arrangements under the Scheme for the Extension of Medical Services, whereby the sick poor may have immediate access to the particular form or place of treatment most appropriate to his case.

Conclusion.

The gradual evolution of the problem of the care of the necessitous section of the population has been briefly outlined, and it has been shown that in the course of evolution the next stage would naturally be to provide care and treatment of the sick amongst them on the lines recently developed for another large section of the community, thus avoiding the class distinction which is rightly regarded as very unfortunate.

II.—JAMES FENTON, M.D., D.P.H.,

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POOR LAW REFORM AND PUBLIC HEALTH IN RELATION TO LONDON.

THERE are wide differences in methods of local government existing in London from those in the rest of the country, and in order to understand the problem of health administration in relation to Poor Law reform in the metropolis it will be necessary to review briefly the London system of local government.

The administrative county of London had a population at the last census of 4,484,523. It has a county council which is the local education authority controlling the school medical service. This body also supervises midwives, provides residential treatment for persons suffering from tuberculosis, has charge of the main sewers, and, although not a sanitary authority, it enforces the law in regard to offensive trades, common lodging-houses, and several other matters. The county council possesses powers somewhat similar to those of a borough council under the Housing Acts in regard to slum clearance schemes and the provision of new housing accommodation. The combination of certain of the duties usually undertaken by administrative county councils, with other duties commonly performed by local sanitary authorities, makes the administrative problems of the London County Council different from those of any other county in the country.

The Metropolitan Asylums Board provides fever hospital accommodation for the whole of the administrative county. It is an independent body, the members of which are nominated by the Ministry of Health and the Poor Law authorities of London.

The Metropolitan Water Board is a somewhat similar body to the Asylums Board, except that its members are appointed by the borough councils.

In addition to the City, which has a peculiar and distinctive position, with many powers and privileges which are not possessed by other authorities, there are twenty-eight metropolitan borough councils. The borough councils are the sanitary authorities in London and exercise the powers and duties as such under the Public Health (London) Act, 1891, and allied measures. They are also the maternity and child welfare authorities and are responsible for the provision of the tuberculosis dispensary service.

There is a Poor Law authority in each borough, and the area in which it carries out its duties is generally coterminous with that of the borough. Commonly the borough council and the Poor Law authority bear the same name. There are, however, a few cases where the areas of two boroughs are combined to form one Poor Law union. The London Poor Law guardians have powers almost identical with those of similar authorities in the rest of the country. One Insurance Committee serves for the entire administrative county.

It will be seen that, apart from the Water Board, there are at work in each borough five independent executive authorities (county council, borough council, Poor Law authority, Metropolitan Asylums Board, and the Insurance Committee) whose activities include health problems, and the existing more or less haphazard distribution of functions amongst them inevitably leads to loss of efficiency in administration and impedes the advance of public health. Not one of the five authorities has a complete knowledge of the whole field of work, with a consequential danger of competition and overlapping. The borough medical officer of health is not in a position to envisage as a whole the factors affecting public health in his area, nor to develop his work on the most efficient lines. The county medical officer of health and officers of the other authorities are even less able to do so, and satisfactory progress cannot, therefore, be achieved.

The present unsatisfactory position of public health administration in the metropolis is mainly due to the abandonment of the principle underlying the Public Health (London) Act, 1891—namely, that the functions of the borough councils should be executive and those of the county council almost exclusively supervisory. That policy was departed from when the school medical service, set up under the Education (Administrative Provisions) Act, 1907, was placed entirely under the direct control of the county council, to the exclusion of the borough councils.

The following examples are submitted to throw light upon what has been written:

(*a*) *School Medical Service.*—The school medical officers of the London County Council are out of touch with the borough medical officer of health. The majority of them are unknown to him. He has no intimate and personal knowledge of their work, he does not control their activities, and has no opportunity of co-ordinating the service with local health administration. The borough medical officer of health is deprived of the possibilities of studying and investigating health conditions amongst school children in relation to home environment by the dissociation from his department of the school medical staff, and the latter loses the stimulus derivable from maternity and child welfare work. The borough medical officer of health does not enter the schools, which are centres from which there may be a spread of infectious disease, for the prevention of which he is primarily responsible. Were the two services (local health administration and school medical service) combined, the individual's health, until the end of school life at least, would be in the charge of one set of officials, medical and other, instead of two independent authorities, with the resultant duplication of home visiting, etc.

(*b*) *Maternity and Child Welfare.*—While the whole service arising out of the Notification of Births Act and the Maternity and Child Welfare Act is entirely in the hands of borough councils, those authorities have no part in such ancillary work as the inspection of boarded-out children and lying-in homes, or the supervision of midwives—all of which is in the hands of the county council, to the detriment of maternity and child welfare work, and from that division of duties duplication of home visiting results.

(*c*) *Tuberculosis.*—Originally the whole of the administrative measures required for dealing with tuberculosis were in the hands of the borough councils and their medical officers of health. Now that the county council arranges for the admission of patients to sanatoriums and other institutions provided by other authorities, the officers of the county council decide which cases are to be admitted, and to a considerable extent investigate their after-histories. The system involves a mass of correspondence as to claims for admission, home conditions, after-care, etc., between the borough medical officer of health and the officials of the London County Council. There is real need for simplification, and if health work were reorganized on the lines to be suggested, the two bodies—the London County

the areas of local government, each of which should have as a centre a considerable town, associated with which would be such surrounding urban or rural areas as would most naturally or conveniently look to such town for its main hospital provision or as a focus of health administration. In each such area the local authority would administer all health services, including those now administered by the guardians and the Insurance Committees.

It is improbable that any such radical revision of areas would be undertaken even by the boldest reformer, so that something short of this ideal must satisfy us.

The council of the Association of Municipal Corporations puts forward for consideration—

"the suggestion that these transferred functions of the guardians should be performed by the council of a non-county borough in cases where that council are the local education authority for the purposes of elementary education and are also an authority under the Maternity and Child Welfare Act, 1918."

This suggestion implies that these councils retain their present health functions and status without the supervision of the county council. Anything less than this would be a calamity to municipal health administration in this country, which in many respects represents the most progressive and advanced health services to be seen anywhere.

I am aware that in the above short consideration of the subject I have not added anything new to views already expressed, nor have I gone into details. Consideration of details might only tend to obscure the main principle for which the boroughs and urban districts are fighting—namely, that they be allowed to carry on their good work with such additional powers and duties as Poor Law reform may impose upon them, but without supervision from the county councils, which is entirely unnecessary and undesirable.

IV.—ARTHUR L. BALY, M.A.CAMB., M.R.C.S., L.R.C.P.,

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FROM THE POOR LAW MEDICAL OFFICER'S VIEWPOINT.

THERE is a great deal of confusion of thought in regard to Poor Law matters, and it is to be feared that as a consequence ill considered schemes may be passed through Parliament, which will make confusion worse confounded and lead to gross extravagance.

Sixteen years' experience as medical superintendent of a Poor Law hospital controlled by a board of guardians enables me to judge what can be done under the existing Poor Law, and as my work has brought me into contact with numerous other authorities at the present time engaged in doing small portions of medical relief, such as tuberculosis, mental deficiency, lunacy, war pensions, etc., I am in a position to express an opinion as to what is likely to happen if the work at present performed by boards of guardians is handed over to any one authority; or, still worse, divided between two or more authorities, none of whom is at present capable of dealing with the work which it is supposed to do completely and efficiently without the assistance of the existing boards of guardians. There is no doubt that if any of the proposals so far put forward are introduced without retaining the present Poor Law system controlled by a local authority in each area of a reasonable size, the result will be waste of public funds and, as far as medical relief is concerned, an even more chaotic state of affairs than at present exists.

It might be worth while, even at this late hour, to ask the question, What is it that the public desire? This question is best answered by quoting from the annual report of the United Hospital Fund for New York, 1924-25, wherein is described a scheme which is being introduced into that city which "will give the patient what he had in the days of the old family practitioner—a single source on which he can depend for his health."

This is undoubtedly an ideal to be aimed at, but in existing circumstances is impossible, and in any circumstances would take a prolonged period, possibly a quarter of a century, to develop. Such a scheme, as far as London is concerned, would require a single authority in each area to deal with all forms of medical relief, and, for efficiency's sake, that area should be large enough to justify the necessary expenditure in order to provide all forms of medical relief in each area, but not so large as to cause the evils always associated with large central (especially medical) authorities. Such a scheme would require that in each area there should be a controlling or parent institution into which patients of all classes, including fever, mental, and all the other specialized branches of medicine, could be admitted, so as to abolish, as far as possible, the separate specialized institutions; and, to complete the scheme, all other institutions in that area, and all domiciliary treatment, should be subordinate to the staff of the parent institution.

How can this ideal be obtained? There is no doubt that the simplest method of attaining such an ideal is by modifying the existing Poor Laws in order to ensure that they will be properly administered.

The Poor Laws sanction the provision of every possible form of medical relief; in fact they not only sanction but require the guardians to provide whatever may be necessary to maintain all persons (who are destitute on account of sickness or insufficient means) *in health*. The standard of work performed by the guardians depends upon the character of the guardians and their officers. Is it past the wit of man to alter the electoral law and constitution of boards of guardians so as to ensure that they will carry out the real wishes of the people? I would suggest that the guardians should be in part elected and in part nominated; and further, that those unable to pay in full for the relief they receive should be disfranchised as far as their local vote is concerned.

Having established efficient boards of guardians it would then be possible to undo the harm caused in recent years by the creation of new and superfluous authorities for dealing with small portions of medical relief and to revert to a single authority in each area, so that the ideal which is being aimed at in New York—of abolishing specialized institutions and placing all classes of patients in charge of a single general staff, assisted by specialists—might be obtained, to the infinite advantage of all concerned, including the ratepayer.

Incidentally this will aid in the solution of the most serious problem connected with lunacy reform, which arises from the fact that certified mental cases have to be segregated in separate institutions known to the public as asylums. Under the scheme outlined it would not be necessary to transfer recoverable mental cases to asylums, but they would be treated in a general institution, or a block of a general institution set aside for the purpose, so that the stigma of certification in such cases would very soon die out, and ultimately the existing asylums would be handed over to the various local authorities and utilized as general institutions for all varieties of cases.

The Medical Centre which is being created in New York by the United Hospital Fund for that city has in fact been started by the amalgamation of a general hospital with several special hospitals, and, although all branches of medicine have not yet been included, it is important to note that a mental hospital has been included.

It must be admitted that an atmosphere has been created, as a result of which the public demand the abolition of the Poor Law; but there is no doubt whatever that, in making what might appear to be a drastic change, a prudent law-maker would abolish the boards of guardians and retain practically the whole of the Poor Law intact, and at the same time create a new and more satisfactory local body to administer that law; avoiding on the one hand the evils always associated with a large central medical authority, and, on the other, the transference of the guardians' duties to any existing local authority which has not in any way demonstrated its superiority to the existing guardians; and, ultimately, having set up a satisfactory local authority, take steps to hand over all questions of medical relief to the single local assistance authority.

The principles suggested in the Maclean report have been put into practice in regard to tuberculosis, the

It is only by such distribution of functions as that outlined that metropolitan public health administration can become efficient, elastic, and capable of fullest development. In this way only can administration be really democratic, enabling the citizens of each borough to have easy access to local representatives and responsible officers in their own areas, for central executive administration over an area so vast as the metropolis must, of necessity, be bureaucratic.

III.—R. P. GARROW, M.D.ABERD., D.P.H.,
Medical Officer of Health, Municipal Borough of Chesterfield.

FROM THE POINT OF VIEW OF THE NON-COUNTY BOROUGH OR URBAN DISTRICT.

THE provisional proposals for Poor Law reform prepared in the Ministry of Health for circulation to the London County Council, associations of local authorities, and others concerned, as a basis for consideration and discussion, have fallen like a bombshell upon non-county boroughs and urban districts throughout England and Wales.

The principal proposal affecting non-county boroughs and urban districts—namely, that the county council is to be the supervising and controlling authority for all health purposes throughout the administrative county—is the cause of profound consternation to members and officials of municipal boroughs and urban districts. Commenting on this, the council of the Association of Municipal Corporations, in its annual report, says:

"It will be apparent to members of the association that these are proposals to which the association could not possibly assent. Some non-county boroughs have been in existence for centuries, and most of them have been exercising health functions for many years before county councils were created. In the opinion of the Council, the borough councils are well able to discharge their duties in this respect, and it would be entirely contrary to their interests and to the public interests that they should be placed under the control of the county councils. Moreover, dual responsibility, which is involved in the proposal of the Ministry, is open to grave objection."

Having regard to the objects sought to be attained by the reforms—namely, unification and co-ordination and the prevention of overlapping—the proposal to put all borough and urban and rural district councils under the county councils is difficult to understand. The Ministry's memorandum says:

"As regards the counties, the problem of administration is complicated (*a*) by the size of the areas involved; and (*b*) by the present existence in every part of the administrative counties of two authorities (the county council and a borough or district council), each of which has functions in regard to health to perform."

But neither the unwieldy size of the counties nor the divided authority throughout their areas is in any way mitigated by the proposal that—

"the county council shall in all cases definitely undertake for the whole administrative county—

(*a*) A general oversight of the administration of all health services, whether existing or transferred, and a duty of acting in the place of a borough or district council declared to be in default in any of those services; and

(*b*) a complete responsibility for (1) the consideration of applications for relief and the grant of outdoor relief (or home assistance) (including domiciliary medical relief), and (2) all institutions transferred under the reform scheme and the uses to which these institutions are put."

Both difficulties would be accentuated by the proposed reforms. If the administrative counties are generally too large for the efficient discharge of the present health functions of the county councils, they will be still more unwieldy if the county councils attempt general supervision and control of all health services throughout their entire areas. The complications arising from the present existence in every part of the administrative counties of two authorities responsible for different health services are generally trifling compared with the possibilities of friction under a system in which every health function became subject to dual control.

Counties and county boroughs have come to be regarded as the most suitable areas of local administration, and all the more important developments in public health in recent years are administered by the county councils and county borough councils. Everybody is agreed that the county borough presents the closest approach to the ideal unit for health administration in this country, but we are very far from a similar unanimity in regard to the counties.

The non-county boroughs and urban districts, of which there are twenty-two amongst the "great towns" of England and Wales with populations of over 50,000, resent exclusion from participation in modern health developments.

Their natural aspirations towards the complete autonomy in local affairs by acquiring county borough powers have had a serious set-back by the recommendation of the present Royal Commission on Local Government that the minimum population entitling a borough to apply for county borough status should be raised from 50,000 to 75,000. But the proposals for Poor Law reform are a still more serious menace to the prestige of these towns, and have stimulated the council of the Non-County Borough Association to pass the following resolution unanimously:

"That this Association will resist to the utmost any further encroachments upon the rights, liberties, and privileges of municipal corporations granted to them by charter."

From the point of view of medical administration, the proposals are fraught with great possibilities if not probabilities of friction and trouble. Administration is a thing difficult to define, but at least it can be said that it has two aspects—one is administering, the other is being administered. The subject is almost invariably discussed from the point of view of the minority who administer, and seldom from the point of view of the majority who are being administered; but the latter is a most important point of view, especially in purely medical matters. It must be remembered in this connexion that public health no longer concerns itself purely with the environment of communities, but has in recent years invaded the realms of personal hygiene in many directions—tuberculosis, venereal diseases, school medical service, and maternity and child welfare. In these departments the medical officers of local authorities are carrying out medical work in many respects indistinguishable from the work of the general practitioner of medicine. It is true that personal advice given by the former is called "preventive medicine," and precisely the same advice by the family doctor "curative medicine," but there is no difference—the public health official in these matters stands in the same close personal relationship to the person advised that the family doctor does. In this relationship his most important asset is his personality, and personality is a thing which cannot be administered. The public medical officer should be as free as possible to give the advice he thinks best without regard to the medical opinions of other medical officials. Further, it is notorious that "doctors differ," and it is a common belief amongst members of local authorities and others that many, if not all, medical officers are "faddists." This belief is supported by high official authority, which says that many medical officers "muddle on from hand to mouth, the victims of every passing whim or popular stunt."

It is probably given to few medical officers of health to distinguish with certainty between ephemeral fads and eternal truths, so that under any arrangements such as those suggested, in which the work of medical officers of health of boroughs and urban districts became subject to the supervision of county medical officers, there would be endless opportunities for difference of opinion leading to friction.

The principle involved is one which seems to me to be of fundamental importance to the British Medical Association, which stands for the honour and interests of the profession. Neither the honour nor the interests of the profession are served by any arrangements which detract from the freedom and independence of large numbers of its members.

From the non-county borough and urban district point of view, then, the proposed reforms are thoroughly objectionable. What are the alternatives?

The first alternative, and the one which seems to provide the most complete solution to the medical difficulties of local administration, is that put forward in the Memorandum of Evidence to be given on behalf of the British Medical Association before the Royal Commission on Local Government. This solution involves a radical revision of

medical officer of health, but the school medical officer only visited after a given number of cases had occurred in the same class. The actual work of inquiry into cases of surgical tuberculosis was done by the borough care committee, but clothes and other necessaries were often provided by the board of guardians. The Metropolitan Asylums Board, which was really a Poor Law authority, provided nearly all the beds for tuberculous cases in London and all the accommodation for infectious diseases. County Council by-laws, she said, were not generally acceptable to the boroughs, but many of them were important from the public health point of view. She asked why each borough infirmary should not become the municipal hospital, with local control independent of the Metropolitan Asylums Board, which now attempted the colossal task of administering some 71,000 beds. She could not follow Dr. Baly in his suggestion of disfranchisement for everyone who accepted any service paid for by the Poor Law, and asked if he would demand the same penalty from a mother who availed herself of the maternity and child welfare service provided by the municipality, or from anyone who had to be isolated in a municipal isolation hospital.

Dr. G. H. PEARCE (Batley) agreed with Dr. Garrow's contention, and gave examples of the difficulties which would arise if non-county boroughs and the larger urban districts were placed under the administration of the county councils in respect of health services. He supported the Memorandum of the Association, and expressed the view that county councils could not carry on the work as well as it was being done at present by the larger non-county authorities.

Dr. H. SCURFIELD (Folkestone) quoted the cases of Essex and Hampshire as two instances in which counties were securing unification of public health services, and pointed out the differences in the methods adopted. Any satisfactory scheme must, in his opinion, include the formation of areas of sufficient size to justify the appointment of whole-time medical officers with local control by elected representatives. It had been stated that democracy was a failure. It might have failed in certain instances, but it was impossible now to contemplate the abandonment of its principles.

Professor F. E. WYNNE (Sheffield) said he thought the differences of opinion which had been revealed within the ranks of the Association were more apparent than real. He did not think anyone seriously wanted to deprive large and highly organized urban districts of public health functions which they were performing satisfactorily. But there were rural areas in which neither the local authority nor the county council seemed to be equipped for dealing with practical sanitation, and it was essential that any reform should include provision for bringing the sanitation of such districts into line with that of the larger urban districts and county boroughs.

Dr. BRACKENBURY (Hornsey) said the Memorandum of the Association had been referred to as his Memorandum. It was true that he had been responsible for the drafting, but that had consisted merely of putting in consecutive order resolutions adopted by the Representative Body and the Council of the Association. There was nothing in that Memorandum that did not represent the considered policy of the Association, and he repudiated the suggestion that had been made that the Memorandum had been drafted without adequate knowledge of municipal administration. Both the Representative Body and the Council of the Association contained members thoroughly experienced in public health administration, and he himself had been for many years a member both of a county and of a borough authority. Dr. Brackenbury then explained in further detail the nature of the delegation of duties involved in the Memorandum, and stated that the Association was not opposed to the assumption of the public health functions of a local authority by the county council where it could be shown to the satisfaction of the Ministry of Health that the local authority was in default.

Dr. B. HILL (Selby) spoke from the point of view of the medical officer of health of a large combined urban and rural area. The whole question was, What was to be the health authority of the future? He was convinced that in the case of combined areas it was essential that all health duties should be retained by them, as otherwise it would be impossible to preserve the individual aspect of public health work, or to increase the interest taken in public health work by the local representatives. Neither of these objects would be attained by making the local medical officer of health merely an assistant to the county medical officer.

Dr. MIDDLETON MARTIN, replying on the discussion, said he had not questioned the administrative competence of boards of guardians or their officials. Unification of the public health services was essential, and there was no doubt that the Government intended to achieve it. He did not suggest that the county council should necessarily be the sole sanitary authority in the future, but they were bound to use their experience of the past to guide them in getting the best authority for the future, and he thought it would be found that in many cases the county would be the best unit of administration.

LEGAL DEFINITION OF LIVE BIRTH.

BY

GODFREY CARTER, M.B.VICT., M.R.C.P.ED., D.P.H.LOND.,

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THE subject of puerperal morbidity has of late been receiving some of the increased attention to which it is justly entitled. It is one having interests in varied directions, and is destined, without doubt, to conserve a considerable amount of infant life; but there is one matter coming clearly within its purview which seems to have almost escaped attention, yet its importance justifies serious consideration. I refer to the large number of babies who are criminally interfered with during or immediately after birth because their advent is not desired, and because, also, it has become known that detection and punishment rarely follow—I was going to say, "follow this crime of infanticide"; but in English law, as it stands to-day, it is no crime, nor even a misdemeanour, to kill a child during the act of being born. This is a fact which, although plainly stated in all our works on forensic medicine, seems to have escaped the attention of the medical profession as a whole, and failed to be seriously noted by medical jurists. The consequence is that throughout the country, and certainly in our cities, an appreciable number of full-term healthy infants lose their lives.

I have been asked, What is the legal definition of live birth? The answer gives rise to surprise: that there is no statutory definition of live birth in English law, only a formula accepted by what is known as "common law."

The rulings laid down by judges in the past, and now by general consent accepted in the courts, are to this effect: That in order to be born alive a child must show some signs of independent existence *after every portion of its body is free from the mother's parts*. As Dixon Mann says in his work: "In order that murder can be perpetrated, the victim must have had a separate existence. The killing of a child in the act of birth, and before it is fully born, is not an offence by the present law."

In the legal sense a partially born infant has not a separate existence, although it may breathe and has consequently acquired the power of maintaining life as a distinct individual. It must be "under the King's peace."

Since infanticide is usually committed with the object of concealing the occurrence of birth, the deed is done in secret, and in most instances without the connivance of a second person. The burden of proof of live birth therefore falls on the medical witness. How is he to swear that when certain injuries found upon the body, and which put an end to physiological life, were inflicted, every part of the child's body was free from the mother's parts? He cannot; only an eye-witness could so testify. The bed-rock fallacy of

domiciliary treatment being placed under the charge of the borough councils and the sanatorium treatment under the county councils. The guardians have ample evidence of the unsatisfactory results obtained, and it may be on this account that the proposals suggested in the recently issued White Paper have avoided the obvious pitfall of dividing the work between two authorities, and suggest the centralization of all Poor Law matters under the London County Council, to be assisted by local committees appointed for the purpose; but there is nothing in the White Paper to suggest that these local committees are to have any more power than is possessed at the present time, in regard to education, by school managers, which power is so limited that the Government proposals amount to the creation of a large central authority. It may be possible to have an efficient central educational authority, but it is very doubtful if, in the opinion of the medical profession, an efficient central medical authority on such a large scale can be devised.

On the other hand, if it is intended to centralize all the work in London on the County Council solely for the purpose of abolishing the existing boundaries, and, without attempting to administer the whole of London from one centre, immediately to redivide the county into suitable areas and place them under the control of local committees with full powers to carry out their work in their own way, the County Council only retaining the supervisory powers at present exercised by the Ministry of Health, it is possible that a satisfactory solution may be evolved.

In view, however, of the cost of centralization, which some authorities seem to consider would be enormous, it might be more economical to reconstitute some of the existing boards of guardians controlling the larger areas and transfer to them all the various forms of medical relief at present under the control of other authorities, and in the meantime the smaller areas could either be absorbed or amalgamated. If the local committees or reconstituted boards of guardians are to be given effective power, there is little doubt that, for the sake of economy, they should be in part directly elected, as it is well known that bodies created by indirect election tend to become extravagant.

It must not be overlooked that not only do the Poor Laws sanction every form of medical relief, but they also require the guardians to demand payment for the relief given from those who receive it and from the liable relatives (adults being responsible for their parents and grandparents, and parents for their children and grandchildren), in accordance with their means after due inquiry. The Lambeth Guardians collect over £20,000 per annum by this means. Is it possible to imagine a local committee, subordinate to a central London authority, lacking any real power (like existing school managers) and not directly responsible to the electors, having sufficient interest to carry out the work of assessing these charges in a satisfactory manner? At present the cost per head per week in the Lambeth Hospital for everything, including interest on loans, is 35s. 4d. for a daily average of 1,360 inmates. Provision is made for the acutely sick of all classes, there being 1,000 beds staffed by trained nurses and probationers, and 600 for infirm and cripples, although a further 400 infirm cases are boarded out elsewhere, which makes the cost even more satisfactory. I venture to predict that the same work will certainly not cost less if administered by a central authority.

The public appear to be demanding two things: first, an alteration in the present system, and, secondly, an increase in the amount of medical work to be carried out by public assistance; and they should realize that both will lead to increased expenditure.

Lastly, there is a most undesirable tendency to amalgamate medical insurance and public assistance. The former should be on an economic basis, possibly assisted by the funds of voluntary charities, and if it is found necessary that any work should be performed by the public assistance authority on behalf of an insured person such work should be paid for out of the insurance funds. On the other hand, any public assistance not paid for in full should entail local disfranchisement.

GENERAL DISCUSSION.

Dr. Eustace Hill (Durham) said the Memorandum of the British Medical Association and the readers of some of the opening papers had overlooked the necessity for unifying the public health services, which was the essence of the proposals of the Ministry of Health. The Memorandum, he considered, must have been drafted without full knowledge of public health administration in all its aspects. It was also inconsistent, inasmuch as it stated that county councils were totally lacking in the machinery for sanitary administration, yet in another paragraph it suggested that the health administration of the smaller rural areas should be handed over to them. It was interesting to note that while the Association of Municipal Corporations and other bodies were opposing the suggestion of the Minister of Health to give supervisory powers to county councils, this principle had been adopted in much recent legislation relating to public health. An instance of this was to be found in the law relating to control of the milk supply, whereby it is enacted that if in the opinion of the Minister of Health a local authority is in default in exercising its duties its powers may be transferred to the county council. This was the very type of legislation to which Dr. Garrow now took exception, yet so far as he was aware no serious objection had been offered by the local authorities concerned while the bill was under discussion. It appeared to be the opinion of some of the speakers that county councils would be found to be lacking in administrative capacity, but if they examined the personnel of such councils they would find that a large proportion of the members were also members of urban or rural councils. At present he considered that sanitary administration in this country was often most ineffective. There were many urban districts with populations of 1,000 or less, and on the other hand there were rural districts with large populations—in some cases exceeding 70,000—which were urban in character and rural only in name. Some system of unification was essential, and he would like to see the counties divided, for purposes of public health administration, into districts with a population of from 80,000 to 100,000, to each of which should be appointed a properly qualified and experienced whole-time medical officer of health, subject to the necessary supervision of the Ministry of Health and the county council. If that were done he would be quite prepared to recommend that much of the health administration of the county council, such as that which concerned tuberculosis, maternity and child welfare, etc., should be delegated to such district officers, who in respect of these delegated services would become assistant county medical officers.

Dr. D. C. Kirkhope (Tottenham) believed that public health administration should follow the lines indicated by evolution, which were in the direction of concentration on the individual. The medical officer of a small area, he thought, had the more intimate acquaintance with the population of his area and the circumstances in which they lived, so that their environmental and personal disabilities were generally known to him and as speedily as possible relieved. It was, in his opinion, the intimate relation with the individual family, rendered possible by the maternity and child welfare and school medical services, that had contributed most largely to the reduction in mortality and morbidity which was general throughout the country. The county area would be too large for the administration of such public health services, although the county might be the authority for the administration of large institutions, which could not be economically established by smaller authorities.

Dr. Stella Churchill (London County Council) said the existing scheme of public health administration in London was responsible for a great deal of overlapping. There was, for instance, the Children's Act of 1908, administered by the County Council with fourteen whole-time inspectors at a cost of approximately £5,000 a year, and the same children were also visited by the health visitors employed and paid by the various metropolitan boroughs. Contacts of infectious diseases in schools were dealt with at once by the local

to arouse the interest it deserves, and I hope it is only necessary to call fresh attention to the facts to ensure that a proper remedy will be forthcoming.

LEGAL DEFINITION OF LIVE BIRTH.

Following Dr. Godfrey Carter's paper, the CHAIRMAN proposed, and Dr. LEWYS-LLOYD seconded, the following resolution, which was carried unanimously:

> That the Council of the Association be requested to approach the Government with a view to securing legislation to protect the unborn child against intentional violence until all parts of it are completely born—that is, during its passage from the mother's body.

COMMENTS AND PRACTICAL SUGGESTIONS ON CIRCULAR 426 (CANCER).

BY

JOHN BROWN, M.D., D.P.H.,

Blackpool.

MY study of cancer began when I was a student in Cornwall in 1868. The first case was a married woman without children who had chronic cancer of the breast. Two years afterwards I left the town and lost sight of her, but on returning to the town in 1924 I found from her tombstone that she had died in 1876, aged 76 years. This woman had lived eight years without operation; the exact cause of death I could not ascertain, but it was probably "natural decay." My second case was one of successful operation, without recurrence, for cancer of the tongue in a woman, and I recently heard from a relative that the cancer was removed in 1875 or 1876 by Sir T. H. Butlin. The patient returned to Australia and made an excellent recovery. She died only two years ago at the advanced age of 87, from senile decay.

These two cases are very suggestive of the value of following up patients. I cannot too strongly urge the adoption of this procedure in all cases, with a special inquiry in regard to such matters as etiology, treatment by operation, dietary, *x* rays, and medicines, on the lines of the questionary which I submitted to the Ministry of Health about three years ago or on the lines suggested by Dr. Hoffman. In all certified deaths of cancer in this and in all civilized countries which have State medical service, each death should be followed up by the "short questionary"; any special feature can be studied later. The importance of this has never been fully realized, and therefore I make this a strong plea.

One of the most important fields for the incidence of cancer mortality is the study of the Registrar-General's report for England and Wales for the years 1918, 1919, and 1920, and the 1919 reports for Scotland and Ireland. I spent a vast amount of time in going through the cancer statistics from the standpoints of the counties, boroughs, county boroughs, metropolitan boroughs, Greater London, cities, universities, industrial towns, and health resorts. I also paid attention to the sites of cancer in the body, the occupational and age groups, and social classes.

The statistics indicate that there are many fields for practical study of many etiological factors of cancer. The cancer death rate in all great centres of the coal industry suggests that the low figure for colliers and their wives is largely due to their active and strenuous life and their plain but efficient dietary. In 1918 I investigated specially the cancer mortality of colliers in the chief centres. The death rate for colliers in Rhondda was 1 in 26.8; in Wigan 1 in 23; and in Northumberland 1 in 22.5. Contrast with this the residential, seaside, and agricultural districts. In Kensington the rate was 1 in 11.8; in Hampstead, Blackpool, Southport, Bath, Hastings, and Oxford 1 in 10; and in Cambridge 1 in 11.

My views on the biological range were those set forth in textbooks and the *Encyclopaedia Britannica*—that all vertebrates, including fish, had cancer, and also that this condition occurred in trees and plants. The evidence in regard to cancer in fish and trees is not, however, conclusive.

Circular 426 was issued in August, 1923. At the end of three years cancer has greatly increased; various circulars and leaflets have been issued, but we have not yet provided efficient free clinics for the early diagnosis of cancer.

In the House of Commons, on July 13th last, Mr. Neville Chamberlain said that there were 50,000 cancer deaths in 1925. This meant that out of every seven persons who have reached the age of 30 years one will die of cancer. He was sure of nothing more certain than that a cure was coming. In the meantime, the most important thing of all was to get early diagnosis, by which life could be substantially prolonged. Similarly the Duke of York and Sir Berkeley Moynihan had spoken in optimistic terms of an early cure. Such statements ought to arouse interest and cause practical steps to be taken to teach the laity the early history of all growths. The preliminaries of cancer in the breast, skin, and mouth can be easily detected before they have become definitely cancerous, and the disease be thus prevented. In the early stages many patients would be cured without operation. We have much to learn from America in this respect, and we ought to adopt any and every successful method employed in America. I have followed what is being done in other countries. As the result of extensive study of the question in this country, and of the early diagnosis and treatment, I believe that there is no specific germ, there is no specific treatment, and in the early stages there is rarely need for operation, because Nature is always on the side of the host. What is wanted is the most careful study of each case, and of all the excretions and secretions; attempts must then be made to restore these to the normal by dietary, maintaining a hopeful outlook, physical exercise, and securing healthy oxygenation. Many patients will get well. Free consultation clinics should be provided for all persons not under medical treatment. I have information from Detroit and Harvard which proves that one of the most practical methods of treatment is to educate the people. Dr. Fraser and others believe that cancerphobia will not follow. We can depend on general practitioners to support the State in this and every other method to prevent cancer, while the lay press will also help. Circular 426 embodies some of the suggestions from my paper on cancer, "Suggestions and conclusions relative to the prevention of cancer," which was read at the Scarborough Congress of the Royal Institute of Public Health in 1923. On page 10 of Circular 426 there is one practical suggestion—namely, that local facilities for clinical and pathological examinations should be established; after three years I fail to find that free clinics have been started. The annual report 1921-22 of Harvard University states that 1,062 cases of cancer were treated; of these cases 668 were growths that can and ought to be diagnosed in the precancerous and early stages of cancer—namely, breast 83, buccal cavity 231, skin 354. The report further states that "since the adoption of the out-patient clinics early diagnosis is made of the suspicious growths and fewer cases in the incurable form are now seen."

We must teach persons, especially those over 35, that cancer in the three sites named ought to be diagnosed when the growths are simple overgrowths of the epithelial tissues, and that the three precancerous stages are curable.

The success that has attended the institution of free clinics for tuberculosis and venereal diseases is strong evidence that similar success will result in the case of the greatest scourge of the whole race. Free clinics should be under the Ministry of Health, and the health authorities should make the arrangements, preferably co-operating with the hospitals, universities, and colleges, so that free examination and advice be open to all. All women over 30 and men over 35 who have suspicious growths or other symptoms indicative of cancer should most certainly avail themselves of these free consultations.

It has been urged that suspicious growths and cancers should be made notifiable; the public is not ready for this, but I suggest that voluntary notification of such cases should be encouraged, when the patient's consent can be obtained. In this way early diagnosis would be obtained, many cures result, and much valuable information be obtained.

A few days ago one of my supporters, in reply to my appeal for assistance from his special branch, replied that he was in sympathy with my views, and that what was needed in the cancer problem was an "ultra Pasteur." The future success will result from the work of laymen of the Pasteur type rather than from medical practitioners. Our knowledge of the new sciences is as yet far too meagre for such a problem as this.

the legal definition lies in the fatal inaccuracy in that the law assumes all children to be born dead unless satisfactory evidence is produced to the contrary. Could anything be further removed from the truth, or act as a greater deterrent to the course of justice? What is the rate of infant morbidity from all causes, and taken in the mass of attended and unattended births? Little more than one in a thousand. Evidence required of an independent existence after the complete extrusion of the child is a fallacy, and probably had its inception in past ignorance, when it was believed that a foetus drew its blood direct from the mother's circulation. We know that the foetus has its own independent circulation, anatomically separate from the mother's, from the time of the establishment of foetal heart beats. Therefore the child has an independent existence when in the mother's womb, drawing its oxygen through a limiting membrane, as later in the lungs.

The living child recovered from the body of the dead mother by Caesarean section is carrying on with the reserve oxygen contained in its own blood. To rule that a full-term well formed child, showing no signs of disease, and obviously having been physiologically alive at or about the time of birth, was born dead, because no witness is produced who will testify to some obvious sign of life, after full delivery, and before certain injuries were inflicted, or criminal interference had taken place, is travesty, and an encouragement to the wrongdoer.

Not all the judges, be it said, have held to the present accepted definition.

Lord Young, at the High Court of Perth in 1892, in charging the jury in a case of alleged infanticide, said:

"If the child was killed and the prisoner was to blame for its death she is guilty of culpable homicide. If she went on from the conception to the birth of the child, desiring to hide her shame, and refrained from calling assistance when assistance was at hand and took upon herself to assist herself, and in the agony of childbirth grasped the throat of the child, with the result of causing its death, I cannot say that she is not blameworthy, or that her blameworthiness does not amount to culpable homicide. If you think that blame does attach to her, then culpable homicide is the name for that blame, resulting as it did in the death of a child which had both cried and breathed. It does not matter in the least, so far as the criminality of the accused is concerned, if the injuries were inflicted when the child was partly in its mother's body."

Again, Mr. Justice Wright, in the case of Rex *v.* Pritchard, for alleged infanticide, tried at the Shrewsbury Assizes in 1901, said regarding live birth:

"That the true test of separate existence in the theory of the law (whatever it might be in medical science) is the answer to the question whether the child is carrying on its being without the help of the mother's circulation."

Commenting upon this Glaister says in his work on forensic medicine:

"This last legal pronouncement levels up the difference in definition between the law and medicine, inasmuch as it is well known that a child may not only breathe before complete birth, but cry audibly before its body is completely born from the mother's parts, and that it can only do this by virtue of the independent exercise of its own organs, and quite apart from the aid of the circulation of the mother.

"If this decision could be accepted as the uniform expression of the law by judges, the medical profession would be called to accept it as being not only in accordance with physiological fact, but as tending to repress the crime of child murder, which has in many cases gone unpunished because of other interpretations of the law by other judges."

I have been deeply impressed with a certain fact in my own mortuary experience, and it is this: that in nearly every *post-mortem* examination I have made upon the bodies of well formed mature newly born children recovered from cellars, closets, middens, linen baskets, and servants' boxes, or found on canal or river banks, there was evidence of full respiration, often associated with air drawn into the stomach, also signs of asphyxia, and in some cases ligatures were present round the neck. Obviously they had had an independent existence when their lives were deliberately extinguished, for *complete* aeration and expansion of the lungs does not take place prior to complete extrusion of the body from the mother. Compression of the chest during birth prevents it. But few, if any, convictions were obtained.

In the preliminary inquiries the question is asked, "Was the child legally born alive?" The law assumes that if not proved to have been born alive, the child never lived, and if it never lived it could not be killed. So matters stand at the present time, and I feel that there is urgent need of a change, and that legal statutes should be instituted which would conform to physiological truth, as well as to common-sense appreciation of facts as proved by medical findings.

In the absence of wedlock the infant mortality at birth is considerably above the average. This is a significant fact; and also that such births frequently take place in secrecy, and the bodies of the children are secretly disposed of, their survival not being desired.

Even amongst the very poor, in wedded life, and where skilled attention is not always forthcoming, deaths from asphyxia are rare.

Nature favours the child at the expense of the mother in order to carry on the race, and if it is desired that children should survive their birth they usually do survive. I will now refer to another aspect of this subject. Although the facts point to the contrary, in some cases where a child was unmistakably born alive, and where the cause of death has been asphyxia, "inattention at birth" is the finding. This "inattention" is in most cases, I am satisfied, criminal. A gross act is usually required to produce death, either deliberate prevention of breathing or abandonment and exposure. Glaister says:

"The inference is, that where a woman conceals her condition during the whole course of her pregnancy, makes no preparation for and calls for no assistance at the time of her delivery, she is conniving at the death of her child, by omitting to do those things which a woman in ordinary circumstances would not fail to do. But at the same time the law does not place upon the woman the burden of proving that her child was stillborn. It puts upon the prosecutor the burden of proving that the child was born alive, and demands of him a proof of the most difficult kind to establish, because of the secret character of the circumstances in which the birth takes place. To our mind this is quite illogical. The older law placed this duty of proving that the child was stillborn upon the mother."

The subject has been considered by two Parliamentary Commissions. The first, the Capital Punishment Commission of 1865, arrived at the opinion that

"an Act should be passed making it an offence punishable with penal servitude or imprisonment unlawfully and maliciously to inflict grievous bodily harm or serious injury upon a child during its birth or within seven days afterwards. No proof that the child was completely born alive should be required."

The second Commission in the Draft Code proposed that

"every woman shall be guilty of an indictable offence who, being with child, and being about to be delivered, with intent that the child shall not live, neglects to provide reasonable assistance in her delivery, if the child dies either just before, or during, or shortly after birth, unless she proves that such death was not caused either by such neglect or by any wrongful act to which she was party."

As Professor Glaister adds: "It is highly desirable that such should become law as soon as possible if the crime of child murder is to be successfully repressed."

To put my views in concrete form I would urge—

(1) That any child born at a viable period of development should be deemed to have been born alive unless satisfactory proof be forthcoming to the contrary.

(2) The adoption of the recommendations of the two Parliamentary Commissions as just stated.

It would be my earnest desire that these provisions should be incorporated in a new Act of Parliament and become law. There is nothing in them which could inflict injustice or hardship upon any innocent or well meaning person. It would also give statutory law in place of loose custom. Its influence would do much to prevent those actions and lines of conduct which at present cause the sacrifice of many newly born children, and in its operation it would do another thing—it would force the accused person to give evidence in the witness-box, and state how it came about that the child did not survive. The witness would then be liable to be cross-examined by the prosecution, and the truth or otherwise of the evidence considered. If she did not volunteer to speak on oath in her defence this circumstance would tell heavily against her, as it does in all criminal charges.

I do not think anyone can be satisfied with the present state of the law concerning the definition of what constitutes live birth. But the matter seems to have failed

the meaning of the terms "parasite" and "parasitism," there follow four chapters on the amoebae, of which, naturally, *Entamoeba histolytica* takes the foremost place. The parasitic amoebae are fully described, but British workers will probably think that undue prominence has been given to species doubtfully amoebic, and more doubtfully parasitic. It is only fair, however, to say that the author is most careful to give the arguments for and against, and, where he has not actually himself worked at the organism, prefers to leave the evidence to individual judgement rather than to express his own opinion as to validity. Among these we may mention, as an example, *Councilmania lafleuri*, Kofoid and Swezy, 1921. Another, by name *Karyamoeba falcata*, is "characterized by one, or rarely more, blunt pseudopodia, hyaline in appearance." Protozoologists will be the first to own that it is not very satisfactory to diagnose an amoeba and create a new genus on such a characteristic. Mere mention of the names would suffice for most of the doubtful parasites.

Flagellata infecting man occupy six chapters, two being devoted to the intestinal species and four to blood and tissue flagellates. Malarial parasites have three chapters, the coccidia, sarcosporidia, and ciliata one each. In each case the synonyms are given, with their dates of bestowal, their morphology, geographical distribution, life-histories, including, of course, some account of their vectors and modes of transmission, their pathology, diagnosis, and prevention—in fact, all that any student of the subject is likely to need, and, but for the fact that treatment of the diseases set up is not included, any medical practitioner. The subject of treatment, other than prophylactic, was not included in the author's aim. Another intentional omission is the spirochaetes, and, *a fortiori*, leptospirae, as these are now considered by the best authorities to be rather bacterial than protozoal.

Colonel Craig discusses in clear language points which are doubtful, states the evidence fairly and holds the balance even, and, when he expresses an opinion, this is always based on actual examination and experience, and not on personal predilection from a mere reading of the literature. The chapters on malaria are interesting. The author makes a distinction between *Plasmodium falciparum* and *P. falciparum quotidianum* (the *P. immaculatum* of Schaudinn) on the grounds that these are distinguishable morphologically, that they differ in the times of their human life-cycle, and produce characteristic febrile paroxysms. His discussion of the question is good, and will command respect in that he gives due weight to the views of those who maintain that there is but one species of aestivo-autumnal parasite. An account is also given of a subspecies of *P. vivax*—namely, *P. vivax minutum*—which, first described by the author in 1900, was rediscovered and named by Emin fourteen years later. It is regarded as the same as *P. ovale* described by Stephens in 1922.

The work is well produced, easy and pleasant to read (although "autopsy" is used as a verb, and ipecacuanha is curtailed of its last three syllables), the illustrations are ample and clear, misprints are almost absent, and the author is to be congratulated on the excellent manner in which he has performed his self-allotted task.

ULTRA-VIOLET THERAPY.

THE little book by Messrs. T. CLYDE MCKENZIE and A. A. KING is rightly called *Practical Ultra-Violet Light Therapy*,[3] for with the exception of the preliminary chapters on electricity and generalities (which might almost be omitted) it deals entirely with the authors' own work. They appear to have used almost exclusively mercury vapour lamps of atmospheric type, for which they claim many advantages over the vacuum lamps which are in more general use. The atmospheric type of lamp is more robust, has a longer life, and is much safer to use, as it can be swung and moved about without danger of fracture by the mercury "hammer." It is, however, somewhat more expensive than the vacuum lamp. The lamps used by the authors are fully described, and detailed directions are given for their employment; no others are mentioned, and consequently the book avoids giving the impression produced by certain other works on the same subject that it is compiled from a number of trade catalogues.

A strong point in favour of the volume is that in it a real attempt is made to place ultra-violet therapy on a less empirical footing than it hitherto occupied. Good methods, both of measuring the intensity of ultra-violet radiation yielded by a lamp and also of testing the sensitiveness of a patient before treatment, are given. The power of the lamp is tested by its ability to decompose carbon tetrachloride, a test which is justified by the fact that the rays most active in this respect are also most active physiologically. The decomposition of carbon tetrachloride liberates chlorine, which can be either titrated accurately by determining the amount of iodine liberated from a standard solution of potassium iodide, or more roughly by comparison of the tint of solution produced when a drop of 10 per cent. solution of potassium iodide is added to the irradiated carbon tetrachloride with a standard tint of known value, previously prepared. In either case it should not be beyond the capacity of any medical man to carry out the test. The sensitiveness of the patient is tested by exposing spots on the forearm to the rays at varying distances from the lamp and observing the reaction produced. A large portion of the book consists of a description of the methods of using ultra-violet light for different clinical conditions. We are glad to notice that full directions are given for its application in each. Here again there is an improvement on other works on the same subject; often the directions have been extremely vague.

We need hardly say that the authors are enthusiasts, and apparently there is hardly any condition for which they fail to recommend ultra-violet light. No doubt the field of application is very wide, but scientifically we think that the clinical section would be more valuable if fewer different conditions had been treated but larger numbers of cases in each category had been collected. On the other hand, the authors cannot be blamed for taking on such cases as presented themselves, and we must thank them for giving a clear account of their work. They have produced the most helpful book on their subject we have yet seen in English, and all who are interested in light treatment (an increasingly large number) should read it with care. They are sure to learn something from it.

DISEASES OF THE SKIN.

DR. RICHARD SUTTON in the sixth edition[4] of his well known textbook on *Diseases of the Skin* has included a large part of the matter of the previous edition with much that is new and valuable. Those who are familiar with this work, both in this country and in America, must admire among other things the clearness and excellence of the illustrations. It is no easy matter to reproduce with anything approaching accuracy the changes, often minute, in the skin when altered by disease. The chapter on general etiology and pathology seems to us to be especially valuable, for it contains in clear summary form the more important of the modern theories, and the application of those theories to dermatology, especially the effects of allergy and anaphylaxis. The author comments in the preface on the voluminous literature on syphilis in its various phases. This statement applies with special force to the use of bismuth compounds, which are, however, only shortly referred to under the treatment of syphilis, although fuller consideration is given to them in the early chapter on internal treatment.

The merits of Dr. Sutton's book have been adverted to in reviews of the previous editions. The fact that a sixth has been called for is in itself evidence of the continued popularity and usefulness of this standard work.

[3] *Practical Ultra-Violet Light Therapy.* By T. Clyde McKenzie, M.B., Ch.B., and A. A. King. With an Introduction by Sir John Robertson, O.B.E., C.M.G. London: Ernest Benn, Ltd. 1926. (Demy 8vo, pp. 108; 19 figures. 6s. net.)

[4] *Diseases of the Skin.* By Richard L. Sutton, M.D., LL.D., F.R.S.Edin. Sixth edition, revised and enlarged. London: H. Kimpton. 1926. (Double roy. 16mo, pp. 1303; 147 figures, 11 plates. 52s. 6d. net.)

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

TRANSVERSE PRESENTATION WITH NORMAL PELVIS AND NORMAL CHILD.

As transverse presentations are fairly rare the following case may prove of interest:

I was called to see an Assamese tea-picker, said to have been in difficult labour for the previous twelve hours; it is rare to be asked to attend these women because they resent, for caste reasons, a man's presence, and are also very mistrustful of the methods of Western medicine. I found the patient anxious, with a clammy skin, a temperature of 98.2°, pulse 120 and thready, and rapid respiration. Further examination showed an abnormally shaped abdomen, a distended bladder, the uterus hard and slightly tender, and the foetal head in the right iliac fossa. Other foetal parts were not well felt as the uterus was strongly contracted. The child was dead and its right hand was prolapsed outside the vulva.

Previous History.—The patient had had ten previous normal deliveries, seven of the children being still alive, while the other three lived for a few years each. There was no previous history of abnormality.

Present History.—Labour had commenced at 1 a.m.; one hour later the membranes ruptured and a hand prolapsed. Labour pains had been frequent and strong but ineffective in expelling the foetus. The patient had had retention of urine for five days. During pregnancy native midwives had several times attempted to procure an abortion as the child was not wanted; this had never been done in any of her previous pregnancies.

Treatment.—The patient was removed to the Estate Hospital. The bladder was catheterized and emptied of 18 oz. of high-coloured acid urine. The os was three-quarters dilated. Attempts to replace the hand and to perform external version failed as the uterus was tightly contracted round the child and all the liquor amnii had drained away several hours before. Uterine contractions were not frequent, but lasted long and were very strong when they did occur. The pulse rate was now increasing. The patient was anaesthetized lightly and I attempted to decapitate the dead child, but failed as the os was tightly contracted round the shoulder girdle, thus preventing the introduction of an instrument. I amputated the prolapsed right arm at the shoulder and was then able to push up the child and get my hand into the uterus, when I seized the child's right foot, performed internal version, and delivered the child as a breech. The os quickly closed round the child's neck, preventing birth of the head. After several methods of extraction had been tried without result I decapitated the child with scissors and proceeded to deliver the retained head. Owing to the small size of the os forceps could not be used, and an attempt at perforation or cephalotripsy would have been dangerous. The patient was deeply anaesthetized, and by prolonged and forcible manual pressure I managed to dilate the os a little more and so was able to place my finger in the child's mouth and pull; unfortunately the mental symphysis gave way. I then put my finger well down the child's throat and, with suprapubic pressure as an adjunct to strong steady traction, I was successful in withdrawing the head. The placenta and membranes followed completely one and a half hours later. A hypodermic injection of pituitrin was given and the pulse soon improved. There was no alarming after-symptom, and the temperature was 99.2° after delivery of the placenta. The manipulations lasted three and a half hours. The next day there was a slight rise of temperature (100.4°), which soon subsided after a hot douche. The puerperium was normal, and the patient is now quite well and working.

Interesting features of the case are that the patient had had ten previous normal deliveries and that the child was normal in size and not deformed in any way; the pelvic measurements of the mother were normal, and no tumours, placenta praevia, uterine obliquity, or hydramnios were present to account for the malposition. Doubtless the manipulations of the native abortionists were responsible for the transverse presentation.

EDMUND BURKE, L.R.C.P., L.R.C.S.Ed.
Mangaldai Medical Association, Dimakusi, Assam.

ADRENALINE IN CARDIAC ARREST.

A MALE infant, aged 6 months, was being anaesthetized for an operation for inguinal hernia when respiration suddenly ceased. He became pale and flaccid, and the heart stopped; he was apparently dead. I injected 5 minims of 1 in 1,000 adrenaline solution into the heart, and in less than a minute the heart began again and the baby was carried out of the theatre crying loudly, much to the relief of all present.

This happened over a year ago, but it is interesting in connexion with the discussion on heart massage.

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Barrow. Honorary Surgeon, North Lonsdale Hospital.

Reviews.

CAMERON'S "DISEASES OF CHILDREN."

Diseases of Children,[1] by Dr. H. C. CAMERON, forms one of the series of Oxford Medical Handbooks, and follows the plan of this series in giving a general survey of the subject, with emphasis on certain aspects. Dr. Cameron defines the object of his book in a neat sentence, as not "a set performance, but only to sound a few chords here and there sufficient to illustrate the astonishing range and tone of the instrument." The topics he has selected for discussion deal mainly with the period of infancy, and in an introductory chapter he shows their interrelation. They are nearly all included in the four great factors of inheritance, environment, food, and infection. The working of these factors is followed out in such problems as difficult cases of breast-feeding, the influence of the infant mind upon general health and digestion, the frequency and significance of catarrhal processes in infancy, certain types of inherited diathesis and their manifestations in childhood, the reaction of infants and children to the mental tone of mothers and nurses, and the interaction of digestion, infection, and purely mental influences in the nutritive disorders of infants. These problems are important, indeed fundamental, and have given rise to much discussion and not a little confusion; they are handled in this little book in an admirably clear and sensible way. These qualities are well seen in the final and longest chapter, which is on diet. The difficult subject of artificial feeding is of set purpose kept to the last, and after the other factors of inherited constitution, of personal management, and of trivial or obscure infection have been discussed. This unusual but really rational order of treatment undoubtedly facilitates the understanding of the problems of dieting in the dyspepsias of infancy; and the British reader is almost unawares persuaded into the German classification of nutritional disorders, *ex constitutione, ex infectione, et ex alimentatione*, though little or nothing is heard of the horrid German vocabulary of special terms. The clinical features, even in dyspeptic infants, are admirably described, and the brief accounts of treatment are most helpful.

Dr. Cameron has some friendly criticisms to make on the methods and policy of child welfare centres; but pays a high tribute to the results already accomplished by them. He also makes an earnest appeal for more consideration and more teaching of the subject of diseases of children in the medical curriculum.

As a well informed, wise, and very pleasantly written discussion of the subject in some of its general and important aspects, Dr. Cameron's little book can be warmly recommended to those engaged in general practice or in special work among children. The matter of the book is so good that the publishers might have allowed a larger page and an ampler margin, but both in what is said and in the manner of saying it the book is *multum in parvo*.

PARASITIC PROTOZOA.

THE *Manual of the Parasitic Protozoa of Man*,[2] published recently by Colonel CRAIG, M.D., of the Medical Corps of the United States Army, covers a field considerably wider than is indicated in the title, in that some free-living species and also closely related forms in the lower animals are dealt with. The author's experience enables him to speak authoritatively upon the subject, and his work, the embodied results of that experience, will doubtless be extensively read and appreciated, as it certainly deserves to be.

After an introductory chapter on the classification, structure, physiology, and reproduction of protozoa and

[1] *Diseases of Children.* By Hector Charles Cameron, M.A., M.D. Cantab., F.R.C.P.Lond. Oxford Medical Publications. Oxford Medical Handbooks. London: H. Milford, Oxford University Press. 1926. (Fcap. 8vo, pp. ix+199. 5s. net.)

[2] *A Manual of the Parasitic Protozoa of Man.* By Charles F. Craig, M.D., M.A.(Hon.), Lieutenant-Colonel, Medical Corps, U.S. Army, D.S.M. London: J. P. Lippincott Company. 1926. (Med. 8vo. pp. viii+560; 95 figures. 35s. net.)

British Medical Journal.

SATURDAY, AUGUST 28TH, 1926.

POOR LAW REFORM AND PUBLIC HEALTH ADMINISTRATION.

DURING the Annual Meeting of the Association in Nottingham there were two discussions relating to the Government's tentative proposals for Poor Law reform and to the opportunity which these proposals afford for far-reaching changes in health administration. One of these discussions was in the Representative Meeting in connexion with the approval given to the Association's Memorandum of Evidence for the Royal Commission on Local Government; the other was in the Section of Public Health. The former was fully reported in the SUPPLEMENT of July 31st (pp. 75 to 79), and the latter is reported on pages 376 to 385 of our present issue. The Memorandum of Evidence referred to was printed in the SUPPLEMENT of May 1st last (p. 172), and the subject has now become of such importance that we may with advantage refer to previous comments in our editorial articles of March 20th (p. 535), April 17th (p. 709), June 19th (p. 1048), and, with regard to its maternity service aspects, June 12th (p. 999). The Minister of Health is now engaged in considering the comments on his proposals which have been made by the British Medical Association, by associations of local government authorities, and by others; and he has himself carried the matter a little further by his recent announcement that his bill, when introduced, will be found to contain important proposals for the wider utilization of Poor Law hospitals. It is now possibly too late to exert any further influence on the form of the proposals in the forthcoming bill, but Mr. Chamberlain has stated that the first introduction of the bill will be for purposes of information and comment with a view to some possible modifications on its reintroduction next year. No doubt this undertaking will be carried out, as has been the similar undertaking by the Home Secretary with regard to the Factories Bill.

It is recognized that the most favourable opportunity for procuring modifications of Governmental proposals is by approaching the department of State concerned before its proposals take shape in a public bill. On the other hand, until the proposals are so formulated there is a real chance of any general memorandum being misunderstood and of tentative suggestions being misinterpreted. Such differences of opinion as were manifested during the two discussions at the Annual Meeting above referred to seem to have been largely due to this cause. It is important just now to emphasize the remarkable unanimity of opinion within the profession on this matter rather than to exaggerate any difference of view with regard to some particular detailed proposal which, however important, can probably be suitably adjusted. The attitude of the profession towards the proposals of the Government in general is one of warm welcome. This is natural enough, since the Association was a pioneer in the movement for Poor Law reform, and has been persistent and consistent in its advocacy for many years. There is a keen desire that the health services at present controlled by the boards of guardians shall be separated from other services which have no essential connexion with them, shall be dissociated from any taint of pauperism in the minds of those they serve, and shall be united as closely as possible with other health services which are publicly provided or controlled. The anxiety of the profession is lest, in spite of the intentions of the Ministry of Health, some, perhaps many, local authorities under the new conditions should be allowed, on the plea of complete freedom of method, to effect these objects less fully or less perfectly than they might. There is real danger of this under the Government's proposals, and every endeavour should be made to strengthen in this direction the requirements of the proposed bill; or subsequently, if unfortunately too wide an option remains, to press the local health authorities to adopt such administrative methods as will effectively unify local health administration, and to establish machinery through which those who have experience of the various services and those through whom any advice and medical treatment must be given may exercise a due influence. The surest and simplest method of effecting this would be a statutory requirement for the establishment of a local health committee to which all health matters would stand referred for consideration, and on which there would be some assured representation of institutions and bodies of persons experienced in the work, together with a representative local medical committee to be consulted on appropriate occasions. The analogy of the education committee is obvious, and might well be followed. It is to be hoped that the bill will at least definitely permit the establishment of committees on these lines if it does not go so far as to require it.

The one proposal of the Ministry to which the Association is decidedly opposed is that by which "the county council shall in all cases definitely undertake for the whole administrative county a general oversight of the administration of all health services, whether existing or transferred," and shall be "the supervising and controlling authority for all health purposes." The arguments against any such provision for dual control and overlapping authority, at any rate in the case of the larger non-county boroughs and urban districts, appear to be overwhelming, and it is probable that some modification of this novel, sweeping, and reactionary proposal will be made before the bill is introduced. It is a matter of minor importance whether this be done positively by giving these large urban sanitary authorities full health powers, perhaps by delegation to them of such as they do not already possess, or negatively by making them exceptions from the general rule as applied to the more rural parts of counties. It is clear that there is, and may well be, some legitimate difference of opinion as to which of these methods is the better in the circumstances; but it is unlikely that the more pronounced divergence of opinion voiced by one or two of the county medical officers of health at Nottingham, that they ought to be placed in a position of authority superior to that of other medical officers, and that no one but themselves, or otherwise than through them, ought to be allowed to advise the county council on health matters, will receive any support whatever either from their colleagues in the public health service or from private practitioners throughout the country. It is to be hoped that the bill will be entirely free from any provisions under which such a dangerous and disadvantageous situation could be established.

THE JOURNAL OF PHYSIOLOGY.

The Journal of Physiology[5] is now appearing with so much regularity that the fourth number of the new volume has been published before we have had an opportunity of referring to some of the papers in earlier numbers. Two of these—one by Anrep and Segall, and the other by Daly and Verney—deal with the heart rate and the circulation (Vol. lxi, No. 2, pp. 215 and 268). These observers have been able so to arrange their experimental conditions that they have had a circulation passing through the heart independent of a second circulation passing through the head and brain. Thus they have been able to show that the Marey reflex, by which a slowing of the heart is brought about, can be aroused by an increase of the aortic pressure and by an increase of the pressure of the blood flowing through the head. This reflex, therefore, depends on the conditions in the brain centres as well as on the stimulation of the peripheral ends of the afferent fibres in the heart. These afferent fibres, they were able to show, run almost entirely in the vagus. Anrep and Segall determined further that the central regulation implied, not only activity of the vagal centres, but also inhibition of the sympathetic centres. Thus there is a reciprocal relation between the inhibitor and accelerator mechanism of the heart. When the heart is released from the control of the nervous system it responds to an increased output by altering the length of its muscle fibres and thus increasing its contractile power, the rate remaining constant. If the nervous mechanism is in control it then responds to an increased output by increasing its rate. This, which is known as the "Bainbridge reflex," is now shown to be beyond all doubt a true reflex depending, like the Marey reflex, on the afferent fibres in the vagus.

Three other papers deal with the response of the cardiac muscle to changes in the fluid medium bathing the muscle tissues. When the concentration of the salts in this medium altered certain differences in the response occurred. For instance, when the medium was made more acid or alkaline the rate of conduction was diminished. When the potassium in the fluid medium was increased the conduction was impaired; when the calcium was diminished the conduction was unaltered, but the mechanical response was affected. An investigation by Gremels and Starling (ibid., p. 297) showed that an increase in the carbon dioxide breathed brought about an increase in the size of the heart, and that this increase affected both the diastolic and the systolic volume of the heart. Acids had the same effect, but produced the increase in volume more slowly. This is probably due to the greater and more rapid diffusibility of the gas. The converse of the increase of carbon dioxide was interesting, for the effect of diminution of the oxygen content of the blood did not manifest itself until the saturation fell to less than 40 per cent. of normal.

Another paper published in an earlier number may here be noticed; it is by J. Mellanby and A. St. G. Huggett, who claim to have shown that secretin exists in considerable quantity in the upper two-thirds of the small intestine in a preformed state, and that there is no evidence for the existence of a prosecretin. The process of the formation of secretin goes on independently of the acid chyme, and perfect pancreatic digestion may exist in the presence of achlorhydria.

In another paper, published in a subsequent number. Professor J. Mellanby states that the introduction of bile of an adequate reaction into the duodenum of a cat causes a copious secretion of pancreatic juice. The active substance was cholic acid, but its effect was profoundly modified by its association with the bile salts, and the presence of mucin. The optimum reaction of bile varied with the state of digestion. The duration of pancreatic secretion after the injection of bile into the duodenum is determined mainly by the distribution of secretin in the intestinal mucosa, which is the immediate stimulus for the secretion of pancreatic juice. The facts are held to afford a basis for the appreciation of the severe digestive disturbances which occur in catarrhal jaundice.

[5] *Journal of Physiology.* Cambridge University Press. Price 12s. 6d. net each. The *Journal* is the organ of the Physiological Society, and is supplied free to members of that Society.

NOTES ON BOOKS.

The surgical examinee essaying the pass examinations will find his subject well abstracted in Mr. C. P. G. Wakeley's *Aids to Surgical Diagnosis.*[6] So long as there are students and examinations the demand for these digests to bolster up the frailties of students will continue. The intense desire for knowledge in the few weeks before the examination, which should have been acquired during those pleasant months which have been allowed to pass, renders the call for "aids" perennial. In many cases it is the "refugium peccatorum," and a few will emerge triumphant, with an eternal blessing on "aids," and a shining example to a host of less fortunate brethren. Analysed critically they are a snare and delusion. Their instruction is superficial and fleeting. Abstracts, to be of any permanent value to the student, should be made from his own clinical and pathological observations with the help of the larger textbooks. He makes these in a manner best suited to his own way of remembering, which is not always the same as the digest of another mind. Mr. Wakeley's little book will be found to give short and concise information on the subjects he has undertaken, and any criticism would be directed to the form in which he has presented it.

A manual of practical work in bacteriology and serology for students has been prepared by Drs. J. F. Norton and I. S. Falk, assistant professors of bacteriology in the University of Chicago, under the title of *Laboratory Outlines in Bacteriology and Immunology.*[7] The time required to complete the series of experiments detailed is estimated at one year, and it is presumed that the book will be used only under the direction of a competent instructor. The manual includes exercises in the preparation of media, the microscopical examination of various organisms, the Wassermann, flocculation, and colloidal gold tests, the examination of water and milk, vaccine preparation, and the production of diphtheria and other toxins and antitoxins, together with experiments on animals.

The second edition of *Systematic Case-Taking*, by Dr. H. L. McKisack of Belfast, appears under the title of *Aids to Case-Taking*,[8] and is included by the publishers in their "Students' Aids" series. The present edition has been revised, and although some of the sections appear to be hardly adequate, yet the book can fairly claim to be a comprehensive collection of methods of examination suitable for the hospital ward or the consulting room of the general practitioner.

Goldfish Culture for Amateurs,[9] by A. E. Hodge and Arthur Derham, is a simple and comprehensive book dealing with the breeding and rearing of goldfish in aquariums and ponds. The book is well illustrated with numerous photographs and drawings, and the information is thoroughly practical.

[6] *Aids to Surgical Diagnosis.* By Cecil P. G. Wakeley, F.R.C.S. London: Baillière, Tindall and Cox. 1925. (Fcap. 8vo, pp. vi + 170; 15 figures. 3s. 6d. net.)

[7] *Laboratory Outlines in Bacteriology and Immunology.* By John F. Norton, Ph.D., and I. S. Falk, Ph.D Chicago. Illinois: University of Chicago Press; London: The Cambridge University Press. 1926. (Demy 8vo, pp. viii + 114. 10s. net.)

[8] *Aids to Case-Taking.* By Henry Lawrence McKisack, M.D., F.R.C.P. Lond. Second edition. London: Baillière, Tindall and Cox. 1926. (Pott. 8vo, pp. vii + 168. 4s. 6d. net.)

[9] *Goldfish Culture for Amateurs.* By A. E. Hodge, F.Z.S., and Arthur Derham. With numerous photographs and drawings by A. E. Hodge. London: H. F. and G. Witherby. 1926. (Cr. 8vo, pp. 103; illustrated. 5s. net.)

PREPARATIONS AND APPLIANCES.

"Porcupine" Bottle Corks.

Attempts have been made to eliminate the accidental poisoning of patients by liniments and the like by constructing receptacles that appeal to one or other of the senses. Thus blue bottles for poisons appeal to the sense of vision, ribbing or corrugation in the glass to the sense of touch. The Waverley Comb Company (374-8, Old Street, E.C.2) proposes to make safety certain by appealing to the sense of pain. Hence the "porcupine" poison bottle stopper. This is an ordinary cork, attached to a disc of wood, which is covered with a tin cap. At four points in the circumference of this cap the tin is turned up into neat little pointed projections, which effectually prevent anyone from hastily withdrawing the cork without a warning of the possible consequences. Of the simplicity and efficiency of this little invention we have no doubt. We wish we could say the same of the intelligence of the patient who drinks from bottles in the dark.

Cholecystography.

Burroughs Wellcome and Co. ask us to state that they can supply sodium salts of tetrabrom-phenolphthalein and tetraiodo-phenolphthalein for use in cholecystography. These salts may be obtained in gelatin capsules for oral administration, or in glass containers if intended for intravenous injection. Medical men should state the strength required when ordering.

word any more than any of the others used in the rule. Indeed, it may well be supposed that the judges, in drawing up rules which were to be used in directing ordinary men of the jury, deliberately selected non-technical words and expected them to be used, as far as possible in such a difficult and abstruse question, in their non-technical ordinary sense. In particular may this be true of the word "know" also, which in its ordinary sense in such a context hardly means more than "be aware of," and it seems to be an unfortunate misconception for scientific people to seek to bound it and tie it down to some such technical connotation as pure "cognition." What, then, is meant by knowing, or being aware of, the quality of an act?

Elaborate interpretations of a far-fetched nature have been suggested by writers on this question, but in its simplest sense surely a "quality" is that which produces a feeling or sensation about the object possessing the quality. To know the quality of an act must therefore be to have such a sensation or feeling about the act as ordinary normal people would have—that is to say, to have normal feeling about the act.

Now sane behaviour, or sanity, depends on the coexistence in reason of these two elements—sane feeling and sane knowledge—as the springs and guardians of action. It is possible that the judges, in framing these rules, wrote more wisely than has been admitted by some of their critics, and that if we read them more attentively we may find in the true meaning of the terms they used a safe and natural escape from what would otherwise appear to be a hopeless impasse. Let us, therefore, consider the cases referred to by Sir Edward Marshall-Hall in the light of this suggestion.

In the first case an engineer, aged 28, shot his father-in-law, to whom he was greatly attached; after so doing he handed the gun to a person standing by, and said, "I've killed my best friend; send for the police." He had been greatly distressed by the attitude of his mother-in-law, who had practically insisted on a separation between him and his wife. In the second case a man in the middle of the night, without rhyme or reason, loaded a gun and shot his wife and one daughter, and when his other daughter, who was his favourite, questioned him he shot her also. Then he walked calmly to his office, lit a cigarette, and telephoned to the police, asking for an officer to be sent as he had shot his wife and child. In the third case a man, aged 24, who all his life had been regarded as weak in the head and abnormal, suddenly without any warning killed his step-brother, aged 14, with a chopper. The only motive suggested was that he was jealous because the boy had been given lessons at the art school. In the first and third cases the sentence was commuted, in the second it was carried out. In Sir Edward's opinion (and he must have been familiar with all the circumstances) it should have been possible for the jury to find in each case that the prisoner was "guilty but insane"—that is, irresponsible in the eye of the law—without doing violence to their oath or their duty.

If, as seems reasonable, we accept this as a correct view of the matter, might it not properly have been held in each case that the accused was labouring under such a defect of reason, from disease of the mind, as not to have the normal feeling about the act he was committing, not to perceive its horror or enormity, even though he had a normal knowledge of what he was doing, and so, in the terms of the rule, he did not know the nature *and quality* of the act? That is surely what was implied by the prosecuting counsel in one of these cases when he said, "the real defence was the crime itself."

Hitherto the stress has usually been laid entirely on whether there was knowledge of the nature of the act, or, as the common paraphrase has it, on whether the accused knew what he was doing; and this usage is illustrated in Sir Edward's account, as has been already pointed out. The effect is to divert attention from the actual expression used in the rule, and, indeed, to alter its meaning. For in the rule it is clearly contemplated that if the accused does not also know the quality of the act he may be held to be irresponsible in law. It is difficult to see how this can mean anything but a sense or appreciation of values, which is something different from and in addition to mere recognition of facts. Is it not possible that this view of the matter may supply the solution of the difficulty that Sir Edward points out, and do this without undue straining of the existing law or the need for remodelling it, and may show the way to prevent in similar cases in future such a miscarriage of justice as he now deplores? If so, the question how this interpretation may best be brought before the courts and pressed upon their consideration is one with which Sir Edward would be most eminently qualified to deal.

One further remark may be made. There is a natural reluctance on the part of the Legislature to modify the law in any way which might make it difficult to maintain the proper degree of responsibility in connexion with minor offences. It does not appear that any such danger would arise from the wider interpretation of the M'Naghten rule here suggested.

THE SCIENCE OF SEA BATHING.

BATHING in the sea has long been regarded partly as a cult and partly as a pleasant pastime, but it has been left for a more modern age to emphasize more particularly its importance as a therapeutic measure and to assign to it a scientific basis. Since 1791 the Royal Sea-Bathing Hospital at Margate has stood as a witness of the value of sea water in treating surgical tuberculosis, and sea-bathing infirmaries were established at Southport in 1806, at Scarborough in 1812, and at Felixstowe in 1868. We have, therefore, not lagged behind in this country in appreciating the possibilities of sea bathing in medical treatment as well as in the holiday programme, and the tonic effects of sea breezes are a matter of general knowledge, but comparatively little attention has been paid to the way in which the beneficial results are produced. In the *Revue Scientifique* for July 10th Dr. G. Baudouin examines sea bathing, viewed as a curative procedure, with particular reference to the physical and physiological questions concerned. Importance is attached to the chemical and physical properties of sea water, especially the proportion of salts, which vary in different places; the temperature factor has never been underestimated, even by the unscientific. The question is complicated by the fact that the influence of the marine air and of sunshine cannot be ignored when estimating the nature of the action of sea bathing. Heliotherapy of an empiric kind in combination with sea bathing was a recognized practice in early times on the sea coasts of Syria, Greece, and Italy, though it is only in later days that the importance in this connexion of the relative scarcity of solid particles in the sea air has been appreciated. Yet another factor in therapeutics, to which attention has been drawn by Professor Pech, is the degree of ionization of the air, which depends largely upon local geological and meteorological conditions. The action of

Throughout these discussions it is of the first importance to bear in mind the two principles which the Association emphasizes in its Memorandum of Evidence. They are: "(1) the utilizing of the family doctor or private medical practitioner in domiciliary treatment of every kind and in the various clinics or treatment centres as far as possible; (2) the voluntary system of hospital support and management wherever possible." If these two principles are recognized and applied the duties and relative responsibilities of the various local government authorities will be much simplified. These are, the profession is convinced, essential conditions for success in any health services transferred to or established by local authorities. Without them the willing co-operation of the medical profession can scarcely be secured or expected. It is believed that they are recognized by the Ministry of Health and are being increasingly appreciated by local health authorities themselves. As we have previously said, "On the one hand, the oncoming of an autocratic municipal or county medical service is to be avoided, and, on the other, private practitioners of all kinds must be brought into responsible relationship with local health administration" if any real interest in preventive medicine is to be cultivated. Twenty years ago the late Dr. John McVail emphasized these conclusions after a very careful study of the Poor Law medical service and administration, and his wise and wide outlook may well influence the social reformer to-day.

CRIMINAL RESPONSIBILITY.

Any opinion on criminal responsibility in relation to insanity expressed by a criminal lawyer of so much experience and eminence as Sir Edward Marshall-Hall, K.C., is worthy of careful consideration. No apology, therefore, need be made for referring to an article by him published a short time ago in a Sunday newspaper (*Sunday Express*, July 25th, 1926). The importance of the article is increased by the fact that its author was a member of the committee appointed by the then Lord Chancellor in 1922 to consider what changes, if any, were desirable in the existing law, practice, and procedure relating to criminal trials in which the plea of insanity, as a defence, was raised. The committee, which sat under the chairmanship of Lord Justice Atkin, reported in November, 1923. In support of the contention that the law as it at present stands and is interpreted sometimes leads to unsatisfactory results, Sir E. Marshall-Hall adduces three recent cases in which he was himself engaged. Lord Justice Atkin's committee recommended "that it should be recognized that a person charged criminally with an offence is irresponsible for his act when the act is committed under an impulse which the prisoner was by mental disease in substance deprived of any power to resist." The recommendation endorsed in substance the principal change in the existing rules suggested by the Council of the British Medical Association and its witnesses in the evidence submitted to the committee. The committee in its report expressed the opinion "that such cases as would be covered by the formula in this recommendation would, in fact, fall within the existing law, as suggested by Mr. Justice Stephen; and no doubt some judges have charged juries to that effect. On the other hand, there seem to be definite decisions of the Court of Criminal Appeal the other way. It seems to us that if this legal doubt should continue it would be advisable to make the law clear by an express statutory provision. We have no doubt that if this matter were settled most of the criticisms from the medical point of view would disappear."

After the issue of the report a bill to establish this point by statutory provision was introduced into the House of Lords, but rejected. In the article before us we have criticism—not, be it noted, medical criticism, but criticism from an eminent criminal lawyer—alleging that, in fact, under the interpretation of the law as it now stands justice may not be done to the insane person. Assuming, then, as in view of this statement we fairly may without question of medical bias, that verdicts may be, and occasionally are, given under the direction of the judges which offend the sense of justice of the ordinary citizen, what remedy can be suggested? Sir Edward urges a modification of the law in accordance with the recommendation of the committee; but Parliament has already considered such a proposal and rejected it, and the committee itself held the view that such cases as are contemplated in its recommendation are or may be protected by the rules of law even as they stand to-day.

If this be so it would seem that more searching attention should be directed to the actual terms of the M'Naghten rules which embody the law on this matter, with a view to discover why they are differently interpreted by different judges, and whether it might not be possible by a clearer and broader interpretation to secure such a uniform application of them that injustice should be avoided. It is rather curious that Sir Edward does not direct his criticism to this aspect of the matter; indeed, he accepts without question the view that in all the cases which he relates the judge directed the jury quite properly that there was no evidence of insanity within the rules laid down in the M'Naghten case, although he holds that the accused should have been found irresponsible on the ground of mental disease. It is to be observed that in the discussion of his three cases, and when dealing in particular with one of them, he says: "The jury were properly directed that the only defence was insanity at the time the act was committed, the same test being applied: Did he know what he was doing and that what he was doing was wrong?" In regard to another case he states: "The jury were directed within the rule in M'Naghten's case, that if they found that the prisoner knew what he was doing and that he was doing wrong when he did it they must find him guilty."

Now each of these statements is a paraphrase of the words in the M'Naghten rule and not the exact words of the rule; yet it may be taken for certain that every word was carefully considered by the judges in framing these rules, and that they deserve, therefore, the utmost care and accuracy in quoting and applying them. The words of the rule are that "to establish a defence on the ground of insanity it must be clearly proved that at the time of committing the act the accused was labouring under such a defect of reason, from disease of the mind, as not to know the nature and quality of the act he was doing, or, if he did know it, that he did not know he was doing what was wrong."

There is one phrase in this rule which is habitually omitted as if it meant nothing, and it is, in fact, omitted by Sir Edward from the quotations in his article. It is fair to insist that it is not only the nature of the act which the accused did not know, but the nature and quality of the act. These words "and quality" deserve more consideration than they generally receive; they are a little unusual in everyday speech, and yet the word "quality" is not a technical

meet running costs. From the outset patients paid according to their means, and the medical staff was paid. Two years after the start finances were so strained that the governors, in the words of the local press, "trembling and terror-stricken, dropped their burden at the feet of the Government." The Government refused to make the hospital a State charge, but passed a bill putting both hospital and charitable relief upon a system of local rating. There was strenuous opposition to this "as the first step towards the inauguration of the British workhouse system." The rating system was carried into effect, but troubles did not end. Ten years later the local press has: "The charitable aid question is at present between the devil and the deep blue sea. On the one hand the Government . . . has cast them off; and on the other, the local bodies, while paying for the cost of maintenance of the various institutions (this they cannot avoid) are not in a fit frame of mind to consider any scheme of benevolence. . . . The blighting shade of centralism has crept over our local institutions." A new board was formed, and the Government met half the cost of the hospital by subsidy, the remainder being obtained from rating. Hospitals and charitable aid were put under separate boards for some dozen years, but in 1909 a new Act brought charitable aid under the control of the hospital board. The action of a magistrate in remanding a prisoner suffering from delirium tremens to the hospital charge brought about something like an association of hospital boards through the islands for common action. This story suggests that the hospitals were becoming more and more State supported and controlled institutions, but there is evidence that the managements retained a considerable degree of independence, and that hospitals made a strong appeal to local patriotism which was reflected in many and generous private benefactions. One of the largest wards was built and endowed to the cost of £20,000, in 1895, by a Polish Jew, who averred that there was no flag fit to live under but the British, and in proof he left all his possessions to the land of his adoption. Now the hospital is complete with every type of special and general department, with a great block for chronic cases, built at the cost of a lady benefactor. Recently a radium and deep therapy department has been added, the cost of which has been defrayed by an anonymous donor. We have before us the first report of the department, written by the officer in charge, Dr. Clennell Fenwick, who is also consulting surgeon to the hospital and a member of the board of governors. The hospital already possesses over £8,000 worth of radium, while the Victor deep *x*-ray machine was installed at a cost of £4,000. A careful "follow-up" system is enabling the after-history of the majority of patients to be ascertained. Already over 500 cases have been treated since the department was opened in November, 1924. The hospital has a share also in prevention, for it controls a large department for venereal diseases, and organizes and maintains "The Social Hygiene Society," which carries on health propaganda through the province. The hospital board is also responsible for "charitable aid," a heavy business. It was hoped that the Old Age Pensions Act of 1898 would decrease the cost of charitable aid. It did not. Children deserted their parents so soon as they obtained a pension. Ultimately the pensions of aged persons in institutions were paid to the board in reduction of cost of maintenance. There is caustic comment on the inhumanity of some classes and the modern scorn of the fifth commandment. In a section dealing with future development a strong plea is made for a widening of the hospital idea; it should be "The Best Community Hospital." It should cater for the private or paying patient, "the private patient who might be described as one who financially is prepared and required to pay for private services . . . and the privilege of choosing any reputable qualified physician or surgeon who may be practising in the hospital area, and who is responsible for his own professional fees." Semi-private wards, it is urged, would reduce the costs of the public wards, and help "the poorest section of the community, the middle class." Dr. Clennell Fenwick is to be congratulated on the result of his labours, for he has shown how, in one place, the apparent antagonism of State and private enterprise can be reconciled for the common good.

AMAZONIA AND ITS DISEASES.

IN 1924 Dr. and Mrs. Hamilton Rice, who have for long actively encouraged scientific exploration in South America, sent out a seventh expedition, organized in conjunction with the Department of Tropical Medicine of Harvard University, which spent a considerable time on a river steamer on the Amazon and two of its chief tributaries. The purpose of the expedition was geographical exploration and medical investigation. A report[1] has now been issued in a well illustrated quarto volume. It is a record of excellent work, carried out with the care and accuracy of detail which we expect from a body of men led by Dr. R. P. Strong, professor of tropical medicine at Harvard. The other members were Dr. George C. Shattuck, assistant professor of tropical medicine in the same school, Dr. J. C. Bequaert, assistant professor of entomology, and Mr. Ralph E. Wheeler, a graduate of Harvard. The report is divided into three parts, each containing several sections: the first part is of the greatest interest to the tropical practitioner, the second to the specialist in entomology; the third part, written chiefly by Dr. Shattuck, relates observations made on some of the tributary rivers. The members of the expedition were clearly not enamoured of the reputed fascinations of the forest of the Amazon. They state that Rangel appropriately named it the *inferno verde*, "where one soon dies of hunger, and, during the dry season, suffers from thirst, when almost all the streams which traverse it are reduced to some few puddles of stagnant or brackish water. It is too thickly and too regularly grown to be grand or picturesque, and too silent to be cheerful. It breeds too much vermin to be agreeable, and produces at length upon the traveller vague sensations of sadness, oppression, and uneasiness." The climate must be trying indeed, for at Manáos, where, and at Para, the expedition spent much of its time, the average temperature is 28.2° C., and the humidity varies between the extremes of 54 and 99 degrees. In the lower Amazon the seasonal variation in temperature is small. Many excellent reproductions of photographs show the general character of the scenery and vegetation, and there are others of the inhabitants and their dwellings. Next, the various prevalent diseases are dealt with. Of the spirochaetoses, syphilis is very rife. Amongst a population of 50,000 in Manáos and its environments there were recorded 13,858 male and 8,475 female cases in the years 1922 and 1923. Yaws is not very frequent. It is stated that some confusion may arise because the term "bouba" is applied, not only to this disease, but to various other forms of ulceration, such as those due to leishmania and blastomyces. Yellow fever, of which many disastrous epidemics occurred in Amazonia during the last century, took a toll from 1903 to 1912 of about 100 cases a year in Manáos alone; it was dealt with seriously from 1911 onwards with marked success. Weil's disease and rat-bite fever (included here among spirochaetal diseases, though the causative organism is probably a spirillum) are met with, but not commonly, and relapsing

[1] Cambridge, Mass.: Harvard University Press; London: H. Milford, Oxford University Press. 1926. (Imp. 8vo, pp. xv + 313; illustrated.)

the sea and sea air in increasing human vitality in impaired nutrition is believed to be due to a stimulation of metabolism, which may, however, be injurious to patients with heightened irritability of the nervous system, or of such organs as the heart, stomach, and liver. When these conditions are present, even in minor degrees, such stimulation causes a holiday by the seaside to be productive of bad rather than of good results. Patients with impaired powers of assimilating phosphorus, or with such increased activity of the oxidative processes as is found in pulmonary tuberculosis or febrile disorders, must therefore avoid the seaside, since in them katabolism is already excessive. In his further inference that such clinical points might be carefully considered before recommending a seaside holiday, Dr. Baudouin would seem to approve the underlying principle of a certain current advertisement illustrating the type of man who needs a holiday on the coast, as contrasted with the older style of poster, which rather implied that any seaside resort would suit anybody. He mentions a number of French seaside towns, and indicates whether they may be considered stimulating or sedative. He clearly disapproves the common practice of recommending the proverbial holiday by the sea for all and sundry, without a rather elaborate consideration of the circumstances. Dr. Baudouin also gives a somewhat alarming description of the physical effects of a sudden unconsidered dash into the sea, mentioning peripheral and central vascular changes, together with cardiac and respiratory disturbances; the gravity of his warning is only slightly qualified by the assurance that such phenomena are usually transient. He speaks more approvingly of the familiar slow and hesitating entry, with repeated halts and occasional retreats, and it would appear that science must now be called upon to regulate yet another of the activities of life. The careful man who contemplates taking a seaside holiday will presumably first submit to an elaborate examination of his physical condition by biochemists and physicians, after which the geographical, geological, hydrological, and meteorological characteristics of possible resorts will be studied in detail before a decision is reached. That there is something to be gained by making a more scientific investigation of the value of sea bathing is undeniable, but it is curious to find a Frenchman suggesting that we ought to take our pleasures more seriously, if not more sadly. We expect, however, that the public as a whole, both in France and England, will continue to be guided by the recommendation of friends and the posters of the railway companies, and will trust individual metabolic capacities to rise to the occasion.

DISPENSING OPTICIANS.

AN Association of Dispensing Opticians has recently been formed as the result of the very general opinion of dispensing opticians throughout the country that the time has arrived for the formation of an organization devoted to the interests of the dispensing section of the optical trade. Membership of the association is confined strictly to those engaged solely in optical dispensing work and their employees, and in no circumstances is an optician who professes or practises sight-testing admitted to membership in any grade. There are four grades of membership, for which certificates are issued: employers, managers, assistants, and craftsmen. The main object is to secure a high standard in the work of dispensing; every effort will be made to ensure that only dispensing opticians of proved ability and experience shall be admitted to the Grade A membership. Medical practitioners and the public may be assured that the holder of this certificate is a fully trained and experienced dispensing optician, who possesses the necessary plant, facilities, and skilled staff satisfactorily to dispense optical prescriptions and to manufacture spectacles. Lectures and classes are held for the instruction of members, and examinations take place periodically in order that members may pass from one grade to another. The syllabus of instruction is printed in the pamphlet setting out the scheme of the association. It differs materially from those of other optical courses of instruction, and should prove of great value to the trade, dealing as it does with the work and problems peculiar to those engaged in optical dispensing. The association is governed by an executive committee of seven, elected by the members, each of whom, irrespective of grade, is entitled to one vote. The association is precluded from engaging in any wage questions or trade disputes. A candidate for membership is required to have at least three years' experience before taking the preliminary examination, and a further twelve months' experience before the final examination is taken. We are informed that it is proposed to circularize all the ophthalmic surgeons of the country setting out the principles of the new association. We feel sure that this move will receive a warm and generous appreciation from members of the medical profession, and ultimately from the public. Ophthalmic surgeons cannot do their work without the fullest co-operation of the members of the optical craft, and there has never been wanting a whole-hearted appreciation of the value of the work done by this great craft in the beneficent cause of medicine. Nothing will better serve to enlighten public opinion as to the separate although related fields of work of the doctor and the optical craftsman than the work of this association; for the public will learn (some for the first time) that there are opticians so proud of their craft, and so completely engaged in the improvement of manufacture and dispensing, that they decline to trench on the sphere of the doctor or seek a fictitious importance by pretensions that mystify the public. It is to be hoped that membership of the Association of Dispensing Opticians, which has its offices at 439-441, Oxford Street, London, W.1, will be wide, and that the activities of the association will be supported by individual members of our profession.

NEW ZEALAND HOSPITALS.

IT is always of interest to see how others do the thing we have to do, especially when the doing of the thing involves difficult problems. Information of the working of hospitals in the Dominions is therefore of peculiar interest. Dr. Clennell Fenwick has done good service in this connexion by writing an account of *The Christchurch Hospital*.[1] It was started some sixty years ago, and is now the base hospital of a large number of linked hospitals and sanatoriums throughout the province. It began as a small local hospital to meet the needs of the pioneer settlers; the site was given by the provincial Government, and it was proposed that lands should be sold to defray the cost of the building, but this was negatived; eventually the hospital was built, but by whom and at what cost cannot be traced, though there is evidence that an appeal for funds was made to the settlers. It would appear, therefore, to have begun somewhat in the fashion of a "voluntary" hospital, albeit with some State help. The management was in the hands of a board of governors, who attained their position by reason of subscriptions, or, as the *Lyttelton Times* wrote at the time, "on a footing similar to that of other institutions of the kind in England." But funds were not contributed in sufficient amount, and the fees received from patients did not

[1] *The Christchurch Hospital: Historical and Descriptive Sketch.* By P. Clennell Fenwick, C.M.G., M.D., J.P., etc. Christchurch, New Zealand: Andrews, Baty and Co., Ltd. 1926. (Demy 4to, pp. 58; illustrated.)

SANATORIUM TREATMENT.

WITHIN recent years several investigations have been carried out with the view of determining the value of sanatorium treatment for tuberculosis. The method adopted has been to trace the after-histories of cases of tuberculosis treated in these institutions and to compare the mortality according to the condition on admission or discharge with that experienced by the general population at corresponding ages as shown by a life table. An inquiry of this nature was carried out by Elderton and Perry in the Galton Laboratory in 1910 on data derived from the Adirondack Sanatorium in America. More recently somewhat similar inquiries have been made from data from Midhurst Sanatorium by Bardswell and Thompson, from Frimley Sanatorium by Hartley, Wingfield, and Thompson, and from Bradford Sanatorium by Vallow. The results of these investigations have been published in reports of the Medical Research Council. Though a considerable amount of valuable information was obtained from these investigations, they all suffered from the defect that they measured progress only by survival, and that no comparison could be established between the after-histories of the tuberculous cases treated in sanatoriums with the after-histories of other contemporary series of cases from the same districts treated by other methods. Such a comparison, not only as regards mortality experienced but as regards progress towards recovery measured in other ways, has now been made in the Galton Laboratory by Dr. Percy Stocks, assisted by M. Noel Karn, and the results are contained in a memoir on the influence of sanatorium and dispensary treatment and housing conditions on pulmonary tuberculosis which has been recently published in the *Annals of Eugenics*.[1] The results obtained from this investigation are of interest and importance in view of the fact that they deal with the treatment of pulmonary tuberculosis in sanatoriums. Though there has been doubt in the minds of some people as to the permanent improvement in the disease to be obtained from sanatorium treatment, the results of previous investigations seemed to suggest that the educational value of such treatment was considerable, in that the patients were taught the principles of a more correct mode of life which had a good influence on their subsequent progress, and, if effectively carried out, might be expected to lessen the spread of infection. The results of this investigation suggest that this view has been too optimistic.

The memoir is based on an exhaustive study of the first 2,794 consecutive cases of undoubted pulmonary tuberculosis brought under the survey of the Belfast Tuberculosis Dispensaries from 1914 onwards. All the cases were examined in the first instance at the dispensaries and a certain proportion of them were recommended for treatment in sanatoriums. Those who remained at least fourteen days in these institutions, in addition to being under observation and receiving dispensary treatment before and afterwards, are defined as "sanatorium treated"; the patients who only received dispensary or domiciliary treatment are described as "otherwise treated." In assessing the stage attained by the disease when the patient first came under observation, the cases were classified separately on an anatomical basis into the three grades, incipient, moderately advanced, and far advanced, and according to the amount of systemic disturbance into slight, intermediate, and severe. Progress was estimated at the end of every three-monthly period from the date of the first visit until the patient was dead or lost sight of, or until six years had elapsed. The patients were at these intervals assigned to one of the following categories: dead, progressive or stationary, improved, arrested, and apparently cured. For the purpose of establishing a legitimate comparison between the progress of the "sanatorium treated" and the "otherwise treated," it was essential to determine and to make allowance for whatever kind of selection had been exercised in recommending cases of phthisis for sanatorium treatment. It was believed that any factors likely to have an important influence on subsequent progress would come under a selection based on the grounds of sex and age; the stage which the disease had reached in the lungs; the severity of constitutional symptoms; the nutrition of the patient; the amount of deterioration since coming under observation; his financial resources, the quality of his dwelling, the amount of overcrowding in his home, or his family ties.

The progress of the "sanatorium treated" and the "otherwise treated" was first compared by a method described as an "exposed to risk" basis. For this purpose the patients were divided (1) into sexes; (2) into two age groups—under 20 and over 20; (3) into groups of those in the three initial stages of disease; (4) into different subgroups of treatment. Then in each subgroup the number of patients surmounting each step of progress at the end of 1, 2, 3, 4, 5, and 6 years, and the total number at these periods whose fate or condition was known at the time was determined, and the progress of various subgroups at the yearly intervals was compared by means of ratios to those at risk or to expected mortality. In the second part of the memoir the method of correlation by alternative categories was used to determine the relation between treatment—both as regards form and amount—on the one hand, and progress and some factors that influence it on the other. By partial correlation it was possible to correct for the principal factors considered likely to influence progress. The authors state that as impartial workers they entered on the research in the belief that proof of the ultimate benefits of sanatorium treatment would emerge from it. To what extent this expectation was realized may be ascertained from their principal conclusions, which may be given more or less in the terms used in the memoir.

1. The average ultimate progress was undoubtedly worse in the "sanatorium treated" than in the case of the "otherwise treated" for patients first seen in the incipient stage, but was not significantly different for patients first seen in the two advanced stages. This relation held in both sexes and for young people and adults alike, whether progress was estimated on a survival basis by the ratio of actual to expected mortality, by the proportion improving to any degree, or by the proportion in whom the disease became arrested or apparently cured. This conclusion was reached after as full consideration as possible of the effect of selection of cases in biasing the prospects of the sanatorium cases. Adequate correction was made for selection on account of age, sex, stage of the disease, and severity of symptoms; selection on account of poverty, overcrowding, and bad home conditions was shown to be negligible in its effect on progress.
2. These results obtained by the preliminary method of analysis were confirmed by those of the correlation method by alternative categories. Having made every possible correction for factors likely to influence progress, sanatorium treatment as contrasted with the other forms of treatment was associated to a significant degree with inferior progress. The correlation method also proved the absence of any relation between length of stay at the sanatorium and ultimate progress, but on the other hand indicated an appreciable relation between regularity of dispensary treatment and progress.
3. The initial stage of nutrition had no appreciable relation to ultimate progress in adult males and only a slight relation in adult females.
4. There was no consistent evidence that bad housing conditions, as judged by rent, class of house, state of cleanliness of rooms, or overcrowding, had any influence on the patient's ultimate progress or rate of recovery.

These are the principal results of the investigation, and the only explanation of this unexpected state of affairs that suggests itself to the authors is that the depressing psychological effects of a long period of enforced idleness in the company of patients similarly affected may in the bulk of cases counteract or even outweigh such benefit as may arise from other factors, and that the continued effort to "carry on" at home may help in itself towards a mastery of the disease.

The authors complete their memoir by stating that if their conclusions are sound it would be well to consider (1) whether the great inconvenience to themselves and their families inflicted upon many cases of phthisis by sending them as a routine procedure for long periods to sanatoriums is justified by the results, and (2) whether the sanatorium treatment should not be reserved for those in whom an unusual form of onset (for example, haemoptysis) has made a very early diagnosis possible, those who are so ill as to require hospital treatment, or those whose circumstances demand their removal from home.

As the results of this very exhaustive and important

[1] The Influence of Sanatorium and Dispensary Treatment and Housing Conditions on Pulmonary Tuberculosis. By P. Stocks, M.D., D.P.H., assisted by M. Noel Karn. *Annals of Eugenics*, vol. i, Parts III and IV, April, 1926, pp. 407-454. Cambridge: The University Press. (Med. 4to, illustrated. Annual subscription, 50s. net; double parts, 35s. net.)

fever is rare. In the pages on the chronic inflammatory and ulcerative dermatoses an excellent account is presented of ulcus tropicum, its history, pathology, possible mode of transmission, and treatment; the description of granulomatous dermal spirochaetosis and "mossy-foot" is illustrated by good photographs of the lesions and coloured plates of the histological appearances. Leprosy is said to be spreading in Amazonia; little appears to be done by way of prevention. The usual mode of treatment is by chaulmoogra oil or its derivatives, but many patients fail to improve even after prolonged courses. Promising results have been obtained by the intravenous injection of 1 per cent. solution of mercurochrome in doses of 2.5 mg. per kilo of body weight. In the section dealing with trypanosomiasis, mal de Caderas, Chagas's disease, and infection of tamanduá (anteater) with *Trypanosoma legeri* are described, and there is a coloured plate demonstrating the main characteristics of the last named. Good work has been done on some of the parasitic infections of animals, such as balantidiasis, myiasis, nematode infestations, haemogregarines, and so on. The second part, which is concerned with medical and economic entomology, contains descriptions of the various genera and species encountered, and will be of interest to the entomological enthusiast. A point worthy of special note is the fact that there seems to be a great dissimilarity in the fauna of the regions of Southern Brazil and the Amazon basin. In the third part Dr. Shattuck relates his observations on the Branco, the Uraricuera, and the Parima rivers; he describes these districts and their crops and animals, makes remarks upon the diseases prevailing amongst the natives, and gives a list of the birds, beasts, and reptiles met with.

ILLUMINATION AND VISUAL CAPACITIES.

IN 1924 the Council of the British Medical Association referred a resolution, unanimously adopted by the Ophthalmological Section of the Annual Meeting, to certain Government departments and to the Medical Research Council. In the terms of the resolution the Association was recommended "to press strongly upon the Government the great need for research upon many problems of vision in relation to the requirements of the combatant services." The stimulus afforded by that resolution was fruitful, for the Medical Research Council, after consultation with the Admiralty, the War Office, and the Air Ministry, appointed a committee to initiate and supervise research work in the physiology of vision, and in so doing to promote as far as possible the attention paid to the subject generally at the universities and other centres. At present very little work, so far as we are aware, is being done on the subject at the universities, and the need is urgent, both for the advancement of primary knowledge and for practical requirements, particularly in medical work. The firstfruits of the establishment of the committee (of which Sir John H. Parsons is chairman) appears in the publication[1] of a critical survey of the work already done in this and other countries in some parts of the applied physiology of vision. The Council made arrangements with Mr. R. J. Lythgoe to prepare the analysis, and he has done his work admirably. In a pamphlet of eighty pages he has given a summary of all the observations published in recent years, and has included references to critical earlier work. Among the matters dealt with are definitions; the influence of different intensities of illumination and the character of illumination on visual acuity; the discrimination of shapes and differences of brightness, and the effects of adaptation; the influence of glare on visual judgement; the speed of retinal impressions in relation to telegraphic signalling; colour vision; and visual fatigue. An extensive bibliography is also provided. No more serviceable work could be put into the hands of the research student who desires to follow up references to work in hand; and the school doctor and ophthalmic surgeon will find points of interest in these summaries which will stimulate them to wider reading and experimentation.

[1] Privy Council, Medical Research Council, Reports of the Committee upon the Physiology of Vision. I: Illumination and Visual Capacities. A Review of Recent Literature. By R. J. Lythgoe, M.A., B.Ch. London: H.M. Stationery Office, or through any bookseller. 1926. (Pp. 80. Price 2s. 6d. net.)

GUIDE TO OFFICIAL STATISTICS.

THERE is a Permanent Consultative Committee on Official Statistics, on which the majority of Government departments are represented. This body has now issued its fourth *Guide to Current Official Statistics*, an ingenious compilation by means of which the inquirer is directed to the particular current official publications which contain statistics bearing on his subject, and is informed of the nature of the statistics he will find in the volumes to which he is referred. The secretary to the committee, Mr. F. A. A. Menzler, gives a very clear statement of the way in which the guide should be used. The system of cross-reference has been so skilfully applied that every reference in a subject index of 187 papers can be found by starting from only twenty-six headings. Consequently, if there is any difficulty in tracing a subject it is only necessary to select that heading of the twenty-six which seems most appropriate to the matter of the inquiry, and the subject is sure to be found in the cross-references under that heading. If it is desired to know what matters are exhibited statistically in a particular publication, a key which has been added to the guide will refer the searcher to pages in the subject index. The guide costs 1s., and is obtainable at the sale offices of His Majesty's Stationery Office, Adastral House, Kingsway, W.C.2, and at the branch offices in Manchester, Edinburgh, Cardiff, and Belfast, or through any bookseller.

THE EDUCATIONAL NUMBER, 1926.

OUR next issue, dated September 4th, 1926, will be the annual Educational Number of the BRITISH MEDICAL JOURNAL. The customary sections, giving a summary of the requirements of the universities and other licensing bodies in Great Britain and Ireland, have been brought up to date, and the information showing the opportunities offered by the various medical schools and other teaching institutions has been corrected by the authorities concerned. These sections, whose purpose is to give concise guidance to intending students of medicine and newly qualified practitioners, will be supplemented, as usual, by articles on such matters as post-graduation study, the public health services, the medical education of women, tropical medicine, and psychological medicine. The introductory article on the profession of medicine has been amplified and revised throughout. In the section on the public services will be found full particulars of the new and improved terms and conditions of service in the R.N.M.S., the R.A.M.C., and the R.A.F.M.S., which the Representative Body of the British Medical Association has decided are satisfactory and such as can be commended to the notice of the younger members of our profession. The opening article for this year's Educational Number has been written at our request by Sir Arthur Keith, who discusses with characteristic charm and wisdom the place of anatomy in medicine.

and Pinewood Sanatorium at Wokingham—out of 1,095 cases discharged (in 863 of which tubercle bacilli had been demonstrated in the sputum at one time or other) the disease was declared to be quiescent, with no signs or symptoms other than those compatible with a completely healed lesion, in 33 per cent.; 39 per cent. were much improved, implying that the general health was good, the working capacity more or less restored, and the signs and symptoms materially diminished. The percentage of recoveries shows improvement on the average of the three preceding years, and in the opinion of Dr. James Watt, chief medical officer of the medical tuberculosis service, the figures indicate again how the prospect of recovery depends more on the degree of constitutional disturbance than on the extent of the damage done to the lungs. Dr. W. C. Fowler describes some difficulties in the search for early cases of pulmonary tuberculosis, one of which is lack of moral courage on the part of the patients to face a situation they suspect to be serious; other cases may be misleading when the neurasthenic symptoms are the first to prevail, or when the early manifestations are those of anaemia or amenorrhoea. The only way of avoiding some at least of the delays in diagnosis is to suspect the lungs as guilty in all cases of ill health until they have been proved innocent by the most careful and repeated clinical examinations. Dr. J. G. Cummins describes a typical case of pulmonary tuberculosis treated by artificial pneumothorax. The treatment has extended over almost two years, and the disease appears to be completely quiescent.

Surgical Tuberculosis and Children's Diseases.

To the section dealing with non-pulmonary tuberculosis Dr. W. T. Gordon Pugh contributes the paper on the relative value of open air, sunlight, and artificial light in treatment, which he read before the Harveian Society in March, and which was reported in our columns (April 10th, p. 657). In that article he described the work done at St. Mary's Hospital for Children, at Carshalton. Dr. N. Gray Hill, of the same institution, contributes an article on ultra-violet radiation from artificial sources, in which his conclusions are that patients with superficial tuberculous ulcers, rickets, and debility do well, but that such cases are easily treated without the use of light; that the local application of the rays is of value in the treatment of lupus, but the general light bath has little effect; that the course of tuberculosis of the spine, hip, or knee, with or without sinuses, is not apparently influenced in any way by the action of light; that the treatment gives no protection against the spread of infection; that pigmentation has little or no clinical significance, and that light treatment has no definite influence on the physical or mental development of the normal or subnormal child.

In January last the Board approved the provision of accommodation at St. Mary's Hospital for Children for 36 girls and 24 boys suffering from rheumatic fever, acute endocarditis, and chorea, and, following a suggestion by Dr. Gordon Pugh, the Board decided later that these beds should be utilized for research, particularly of a bacteriological nature. Dr. Pugh contributes an interesting article on the general subject, but, of course, this experiment is too recent to admit of any report as yet.

A VISIT TO THE ISLAND OF TRISTAN DA CUNHA.

WE are indebted to the Medical Research Council for a copy of a communication based on a report made by Dr. E. H. Marshall, surgeon to the *Discovery*, of a visit to Tristan da Cunha during the recent voyage of that ship. The visit was made on January 30th, 1926, and lasted two days.

Dr. Marshall recalls first the history of the peopling of Tristan da Cunha. The islanders are descended from seven British men who married coloured women from St. Helena and the Cape a century ago. On only a few occasions has other blood been introduced—once when Peter William Green, a Dutchman, was shipwrecked in 1846; once in 1856 when Hagan and Rogers came to the island from America; and again when Repetto and Lavarello, Italian sailors, were shipwrecked in 1882. In recent times Robert F. Glass, headman of the present colony, who is a grandson of Corporal Glass, returned from the Cape with a Cape woman as his wife. The population of the island on February 1st, 1926, numbered 141 (75 males and 66 females), sixty-nine were adults, twenty-one were between the years of 14 and 21, and fifty-one under 14 years of age. Of the children under 14, twenty-three were under 4 years and four births were expected before May. There were only three persons over 80, all women, the oldest being aged 89, a remarkably well preserved woman. The oldest male on the island was aged 68. Two deaths had taken place since the island was last visited—one of a woman in December, 1925, aged 73, and one of a premature female child who lived for six days. The education of the islanders has been dependent on the efforts of clergymen, who at intervals of twenty years or so have lived on the island for periods of two to three years. It is not surprising, therefore, to find very few who can read and still fewer who can write. It has been stated that the islanders appear stupid. This has arisen through not realizing that they have a dialect of their own with a very limited vocabulary. They are extremely sensitive about their lack of education and little knowledge of English, and this constitutes an obstacle to any scheme of emigration or even temporary employment outside the island.

For trade the islanders have always depended on supplying ships with fresh meat and potatoes, in return for flour and other articles they are unable to produce themselves. Since the advent of steam and the discovery of fresh whaling and sealing grounds further south, this trade has disappeared and only an occasional sailing ship or whaler now ever calls at the island. Mr. Robert Glass stated that the domestic stock on the island consisted of cattle and sheep, some donkeys, a few pigs, and some hundreds of fowls and geese. There were 245 plots of land, varying in size from 20 to 40 yards square, planted with potatoes. The appearance of the islanders did not suggest that they were suffering from the effects of shortage of food. The men are of good physique and above the average height. The women, who work in the fields, appeared superior to the men and have a deportment reminiscent of a bygone age. Their clothes are tidy and they are cleanly in their persons. The children were quiet, well behaved, and appeared well cared for. Very few of them, and only a small percentage of the young adults, show traces of their coloured ancestry, whereas among the older inhabitants this is marked. During the visit six cases of asthma and chronic bronchitis, all of long standing, were treated. Several of the islanders complained that after ships call an epidemic of "colds" runs through the island, lasting for about three weeks. Two cases of chronic rheumatism and a few minor medical and surgical cases were seen. Robert Glass has charge of a well equipped ship's medicine chest. During the last twenty years at least the island has gained a certain notoriety by pleading for support from the outside world because of failure of the potato crop and destruction of stock during severe winters. Though hardships may have followed these calamities, it is extremely improbable that the islanders have been near starvation. It appears that fish are plentiful and easily caught, but are not popular. Hens' eggs are scarce and are consumed mostly by the wealthier families. Mollymauk eggs are taken in large quantities, and 30,000 penguin eggs are collected annually. Young mollymauks are eaten in large quantities. According to Mr. Glass 7,000 were taken during January. The islanders also go to Inaccessible Island to collect and salt these birds. It was said that cattle and sheep were mostly kept for trading purposes. As trading has practically ceased, it might be supposed that they are now more frequently consumed by the islanders. Milk is nearly always plentiful; but for long periods the islanders are without tea, coffee, and sugar. Butter, jam, and marmalade are only very occasionally available, and the inhabitants are dependent on trading for bread, as no wheat is grown. Their main source of carbohydrates is potatoes. Onions, pumpkins, turnips, carrots, beetroot, and leeks are grown, but in comparatively small quantities. It will be seen that the outstanding shortages are flour, sugar, jam, and tea. In sailing ship days there were frequent opportunities for

investigation seem to be at variance with more or less generally accepted beliefs regarding the advantages that accrue to tuberculous patients from treatment in sanatoriums, it would appear to be desirable to attempt to obtain without delay confirmatory evidence for some districts in this country where the prevailing type of pulmonary tuberculosis may be different from that in Belfast.

THE METROPOLITAN ASYLUMS BOARD.

REPORT FOR 1925–26.

The annual report of the Metropolitan Asylums Board for 1925-26, which is a large volume of 366 pages, takes the form of a general review of administration and a special survey of each of the four main departments of the Board's medical work—namely, infectious diseases, mental diseases, tuberculosis, and sickness in children—supplemented by contributions from medical superintendents and others on interesting cases or particular phases of the work. The Board serves an area of 121 square miles, with an estimated population of 4,600,000. It has fifteen hospitals for infectious diseases, six mental hospitals or colonies for the feeble-minded, ten institutions for tuberculosis, and five for sick or convalescent children. It has also an ambulance service which during the year transported 80,000 patients. The statistics given relate generally to the year 1925, but some account of the work of the Board is given up to May, 1926, which is the end of the Board's administrative year. The provisional proposals of the Ministry of Health to transfer to the London County Council the oversight of all health services, including those for which the Board is responsible, are regarded with disfavour by the Board, which is convinced that the Council would find it impracticable to undertake this substantial addition to its present duties and at the same time to maintain a close contact between the elected representatives of the public and the work so transferred. The Board urges the desirability of its continued existence as a separate body.

Infectious Diseases.

For fever cases the Board has 8,620 beds; the largest number of cases under treatment at any one time in 1925 was 5,495 (in November). The total number of cases of infectious disease, exclusive of chicken-pox, tuberculosis, whooping-cough, and zymotic enteritis, notified during 1925 was 44,504, or 10,861 more than the previous year, but 13,481 fewer than in the epidemic year (1921). The case mortality rates for all diseases, with the exception of whooping-cough, were low. The diphtheria rate (4.57 per cent.) was the lowest yet recorded, that for scarlet fever (1.07 per cent.) was the lowest except in 1921, and the rate for enteric fever (8.44 per cent.) has only twice been lower; whooping-cough (13.37 per cent.) showed almost the highest case mortality recorded. During the year eleven patients suffering from small-pox were admitted to hospital; ten recovered and one died. The only serious outbreak was at Bethnal Green, where a man was stated to have acquired the infection through handling foreign rags; this man infected his wife and two children, and within three months four additional cases were admitted from the same locality. Of the eleven patients eight had been vaccinated in infancy only (that is, from twenty-seven to sixty-six years before); in the other three there was no evidence of vaccination.

The incidence of diphtheria was unusually high. The admissions for diphtheria and membranous croup numbered 10,251, out of 12,595 notifications. The Board has arranged for certain researches to be made into the microbic flora of the throat and nose in diphtheria carriers, with a view to ascertaining, among other things, at what points the bacilli appear to be specially liable to persist and the anatomical conditions associated with such persistence. The figures for scarlet fever are curiously close to those for diphtheria—10,508 admissions out of 12,298 cases notified; and the same approximation shows itself in the average period of residence of recovered patients at the "acute" hospitals—fifty-nine days for diphtheria patients, fifty-seven for scarlet fever. The largest number of attacks of scarlet fever occurred in the second quinquennium of life, whereas in diphtheria it is in the first quinquennium that the attacks were most frequent. Dr. Foord Caiger, chief medical officer of the infectious hospitals service, raises the question whether the policy hitherto pursued by the Board of according priority of claim for hospital isolation to scarlet fever as against measles is justified in view of the very low mortality of scarlet fever. Of the 10,508 scarlet fever patients admitted to the Board's hospitals only 111 died, whereas of the 1,902 cases of measles the deaths numbered 121. He thinks that, having regard to the failure of hospital isolation to limit the spread of scarlet fever, to the much higher mortality of measles, and to the beneficial effect of hospital treatment on the course of the disease when occurring in children from poor homes, the policy should be reversed and the preference given to measles. Of the infectious cases received at hospital during the year the diagnosis of the certifying practitioner was not confirmed by the medical officer of the hospital in 15.2 per cent. Among the common diseases mistakes were most frequent in respect of enteric fever; 31.2 per cent. of the cases so certified were found to be suffering from some other disease. In cerebro-spinal fever, for which there were only 17 admissions, and encephalitis lethargica (32 admissions), the proportion of mistaken diagnoses rose to 56.4 and 56.8 per cent. respectively, though it is admitted that with regard to the latter disease, by reason of the frequently anomalous character of the symptoms, the original diagnosis might not have been incorrect in some instances.

The Board has adopted certain suggestions put forward by the Ministry of Health to concentrate puerperal fever patients in two or three hospitals, so that such patients may receive more skilled medical and nursing attention and greater opportunities for research may be afforded. Such cases, therefore, have been concentrated in the Eastern, North-Western, and South-Western Hospitals, and a visiting obstetric consultant has been appointed. The number of cases of puerperal fever admitted to hospital in 1925 was 87, only slightly in excess of the number admitted during the previous year, and the case mortality was 23 per cent. It is hoped that with another year's work in the clinical unit much information with regard to the infecting organisms and other matters will be elicited and the prevention and treatment of the disease advanced.

Mental Cases.

The cases remaining in the Board's mental institutions on December 31st numbered 9,352. These included cases certified under the Lunacy Acts, but chronic and harmless, and under the Mental Deficiency Act, as well as sane epileptics, uncertified feeble-minded, and poor aged persons who by reason of mental infirmity required institutional treatment. The average annual number of admissions during the past three years has been 1,424. Pathological laboratories are now provided at three of the mental hospitals, and another is to be established at a fourth. Many cases of abnormal mentality following upon encephalitis lethargica have been received into institutions controlled by the Board, and arrangements have been made for a special group of them to be dealt with separately, and 100 beds have accordingly been set apart at the Northern Convalescent Hospital. The admission of these patients did not begin until November last, and it is premature to speak of results, but the comment is made by Dr. Kinnier Wilson, consulting neurologist to the Board, that much less difficulty has been encountered than was expected in regard to cases of inversion of sleep rhythm, and that the atmosphere of the unit with its system and discipline has proved favourable in cases of behaviouristic impairment. Stress is laid upon the particularly heterogeneous character of the clinical material.

Pulmonary Tuberculosis.

The admissions to institutions for pulmonary tuberculosis numbered 3,953, and the discharges 3,601. The average duration of stay at the three sanatoriums (for men, for women, and for children) was 133 days. At Colindale Hospital, which is for advanced male cases, the average stay for discharged patients was 142 days, as compared with 117 days in 1924. In the two sanatoriums for adult cases—King George V Sanatorium at Godalming,

"too often blamed for the condition. When a child is sucking at its 'dummy' it is obliged to breathe through the nose—and the mouth of the young is intended for suction, since all its food is taken that way." Ionization for otorrhoea has given variable results, and there has been a tendency to relapses; better results are obtained by following on at once with aural lavage, etc. Approval has been obtained for the formation of a day open-air school. There are many mentally defective children not in special schools, either because they live too far away or there is no place for them. These are examined periodically. It is very noticeable that the older these children get the less they are able to keep pace with the normal children; moreover, their instability of character and general lack of common sense render them a source of trouble and irritation in a class. There is a record of a special investigation into the "fitness of schoolboys," which is excellently worked out and of much value. Random samples of boys in a higher-grade school and an elementary school were compared. Boys in the higher-grade school showed a percentage "above normal" of 64, as against 30 in the elementary school. It is added that "the contrast possibly shows the effects of the operation of favourable and unfavourable environment, but the inherited characters of the boys also operate." The report of this investigation is worth study.

CITY OF CARDIFF MENTAL HOSPITAL.

In his eighteenth annual medical report, Dr. Edwin Goodall, medical superintendent of the City of Cardiff Mental Hospital, discusses the difficulties of assessing the value of inherited factors in the causation of mental disorder, excluding those in which no history was given. Heredity of some kind was elicited in 41.9 per cent. of the direct admissions during 1925, but Dr. Goodall points out that no reliable conclusions can be come to until comparative statistics are available, showing to what extent a given number of persons who have not shown mental disorder have inheritance of mental and allied disorders, in comparison with a like number who have become insane with like inheritance; obviously, a very difficult line of inquiry. Dementia paralytica accounted for 13.58 per cent. of the admissions. The number of patients discharged recovered was 74, giving a recovery rate of 40.2 per cent. Research has been carried out on the estimation of phosphorus and calcium in the blood plasma and cerebro-spinal fluid, and on the presence of porphyrin in faeces. The visiting Commissioners have expressed their satisfaction at seeing so steady an output of research and therapeutic work, affiliated in increasing extent to that of the Royal Infirmary and the University, and at observing the team work of which every new admission has the full benefit.

CENTENARY OF NORTH DEVON INFIRMARY, BARNSTAPLE.

On August 15th, 1826, the North Devon Infirmary opened its doors for the first time to patients, and at Barnstaple and elsewhere in North Devon 100 years later the centenary was observed as a day of rejoicing and of renewed effort. Special thanksgiving services were held in several churches in the morning, and in the evening at the War Memorial in Rock Park. Under the presidency of the first Earl Fortescue the inaugural meeting of the founders of the institution was held in March, 1824. The foundation stone of a building to contain twenty-two beds was laid in the following January, and four years after the infirmary began work a wing was added for infectious cases. The chief difficulties of the earlier years appear to have been financial or due to undisciplined patients. The importance of good ventilation and sanitation was recognized practically as early as 1841. In 1857 the drainage system was thoroughly overhauled and a good water supply obtained; from that time it is noted that baths ceased to be regarded as mere luxuries. On the death of Earl Fortescue, the first patron, in 1861, a new wing containing two wards was erected to his memory, and in 1880 Dr. Richard Budd, who had been physician to the infirmary for nearly forty years, devoted the financial testimonial presented to him on his retirement to the erection of an out-patient department, which was opened in 1882. In the next year another wing was added and beds were endowed, while in 1889 the operating theatre was reconstructed and refurnished. The formation of the Ladies' Association in 1904 was followed by a long series of numerous valuable additions to the infirmary, including the provision of an electric lift in 1921, an *x*-ray installation in 1924, and a new operating table. In 1906, as part of an extensive scheme of structural alteration, sanitary towers were built, a new isolation ward was added, and the out-patient department was enlarged and improved. In 1922 the system of contributions by patients was begun, and in 1925 the lady almoner collected £555 from this source alone. In celebration of the centenary, in connexion with which a souvenir pamphlet has been issued, an appeal is being made for £10,000 to constitute a re-endowment and building fund; a sum of £7,000 has already been received. The opening of a maternity ward is proposed, and provision is to be made for the outdoor treatment of cases of surgical tuberculosis. The expenditure for 1914 was half that of 1924, but the annual income has risen from £2,838 in the first year to £5,059 in 1924. It is hoped that the present appeal will enable an additional annual income of £500 to be provided.

LIVERPOOL STANLEY HOSPITAL.

It was stated at the fifty-ninth annual meeting of the Liverpool Stanley Hospital that for the first time in the history of the institution the annual income had exceeded the expenditure. The Lord Mayor, who presided over the meeting, while praising the enthusiastic work of the hospital committee and the supporters of the hospital in general, said that there was still a large debit balance; during the past year, however, it had been reduced, and it was hoped that before very long it would be extinguished. In the course of the previous year the entire cost of new *x*-ray apparatus had been defrayed by an anonymous donor, and the London, Midland and Scottish Railway Company had given £600, a sum which it was hoped might be increased during the current year. Treatment had been given during 1925 to 1,718 in-patients and 19,757 out-patients, and there had been 67,822 out-patient attendances. Sir Benjamin Johnson referred to the steady gain in popularity which had now resulted in the Stanley Hospital being regarded as one of the leading hospitals in Liverpool.

Scotland.

AFTER-EFFECTS OF ENCEPHALITIS LETHARGICA.

THE Scottish Board of Health has issued a circular dealing with the hospital treatment of persons suffering from the after-effects of encephalitis lethargica. It deals particularly with the Glasgow area, but has general reference to the whole of Scotland. The disease was made notifiable in Scotland in December, 1925, but it is noted that, while it must be regarded as infectious, the infectivity is certainly low and little is known of the way in which it is disseminated. The handling of cases in the acute stage is, on account of their relatively small numbers, well within the scope of existing infectious diseases hospitals, but a difficult problem is offered by the patients who, on account of the prolonged or permanent nature of the after-effects, tend to accumulate as subjects requiring hospital treatment. Neither hospitals for incurables nor those for infectious diseases are in a position to provide the special treatment and nursing required. A conference was held last March between representatives of local authorities and of the parish council of Glasgow to consider what action should be taken in regard to late stages of this disease. The general feeling of the meeting was that the local authorities should accept responsibility for their treatment, except in cases where the patients, on account of their mental condition, required treatment in a mental hospital. It was agreed that individual local authorities could not by themselves deal with the problem, but that if they could send their cases to a central institution they would fall in with the proposal. The parish council of Glasgow subsequently offered to make

bartering for these commodities. Though the islanders have now almost to do without these articles, there seems no reason to think that their health has suffered. Out of 50 persons examined, only 6 admitted that they suffered from indigestion or flatulence, and these cases were of some years' standing. The Dental Committee of the Medical Research Council had suggested that if the opportunity arose the condition of the teeth of the islanders should be investigated, and just over one-third of the islanders were examined for dental caries, and the results were tabulated as follows:

Analysis of Cases Examined.

Age Period:	3-14.	15-20.	21-44.	45-90.
Number examined	13	8	21	12
Number of teeth	290	235	662	337
Number of carious teeth	2	0	11	21
Number of carious mouths... ...	1	0	5	8
Number of teeth missing	0	0	6	45
Percentage of carious teeth... ...	0.68	0	1.6	6.2
Percentage of carious mouths ...	7.6	0	23.8	66.6
Chronic general periodontitis ...	0	3	14	7

Thus the incidence of dental caries is remarkably low, and would probably appear still lower if opportunity had presented itself to examine all the community. The teeth examined were almost without exception regular and well shaped. Although in no case did anyone admit to cleaning his or her teeth more often than once a week, and then only with finger and soap, the teeth were clean and remarkably free from salivary calculus. It is probably correct to say that the islanders, as a whole, never clean their teeth. Chronic general peridontitis was present in various stages in no less than 58.5 per cent. of those examined between the ages of 15 and 90. This is probably not a disease of recent origin in the island, since histories, dating in some cases more than twenty years back, were given of teeth becoming loose and falling out without showing signs of caries. How far a shortage of sugar and jam has prevented the spread of caries, and what influence the large consumption of potatoes, on which the islanders rely almost exclusively for their carbohydrates, has had on the incidence of chronic general periodontitis are matters for discussion.

It is evident that the population of the island is increasing. The health of the community is good and there are no signs of mental or physical degeneration due to intermarriage. There are signs that, in spite of there being no currency, property is passing into the hands of a few. For one reason or another the older islanders will never leave the island of their own free will, and the younger ones have little or no opportunity of leaving, however much they may desire to do so.

England and Wales.

Reports of School Medical Officers: Liverpool and Manchester.

The annual report of the school medical officer for Liverpool illustrates the growth and success of the work of school medical inspection and the treatment of defective children. Some difficulty is experienced in getting children to attend the clinics owing to the loss of school attendance marks, and it is stated that "the present regulations of the Board of Education dealing with this point not only hamper the work of medical treatment, but also involve the education committee in unreasonable loss of grant, and it is greatly to be hoped that this important matter will receive the very careful consideration of the Board." A great improvement in cleanliness is reported, not only in the diminution of the number infected, but also in the degree or extent of infection in those children who are not perfectly clean. The teachers co-operate whole-heartedly in this work, and some have rendered valuable help by interviewing difficult parents. There has been a diminution in the incidence of malnutrition, but there are still far too many children undernourished or debilitated. "It must not be assumed that this is necessarily due to poverty, for many cases come from homes where this factor can be ruled out, whilst well nourished children are met with in poor homes." Of the many contributory causes improper feeding is held to be the chief. There is too much starchy food in the form of bread and potatoes, and too little fat and animal food. Fresh milk has been largely displaced by the use of tinned milk. Education is needed, and much can be done by teaching the senior boys and girls the elements of hygiene. An inquiry into vaccination showed a satisfactory percentage of vaccinated children; the unvaccinated totalled 16.3 per cent., as against about 56 per cent. for the whole of England and Wales. Among minor ailments septic sores and impetigo head the list. Ringworm has declined, and cases are readily cured by the use of x rays; only 179 are now out of school from this cause, as against 288 in the same period five years ago. Scabies continues to decline owing to the work of the cleaning stations. Tonsils and adenoids show a slight increase, so does middle-ear disease. For the treatment of the latter zinc ionization bids fair to be a real success. The amount of dental treatment given continues to increase, owing to propaganda work amongst the children and parents; there is an increased acceptance of the treatment, but there is the handicap of the loss of school marks during attendance. The incidence of stammering has been investigated; as many as 600 cases were noted, boys preponderating in the proportion of 5 to 1. So far no special classes have been formed for these children in Liverpool. One of the rare disadvantages of school treatment is shown in the record of squinting children; it is found that parents deliberately postpone treatment, knowing that this will be forthcoming when the child goes to school! It is urged that the early provision of glasses in pre-school life, with the increased chance of cure of the squint and the retention of vision, is of greater importance than operations later in school life. A special investigation of the hygienic condition of the school buildings was undertaken during the year. On the whole the report is fairly satisfactory. The worst feature is the position of the desks in the classrooms. Only 40 per cent. of the total were entirely satisfactory from the point of lighting. The older schools were the worst, and in these the desks could not be rearranged. Dealing with special schools, note is made of the success of the defective vision classes (myope classes). There is evidence of a personal contact between teacher and child, and the atmosphere of a happy family. The children are interested in their work, and the change in demeanour is marked. Antipathy to these classes is now rarely met, and parents are increasingly anxious to avail themselves of the advantages they offer. Advice is given on after-employment, and parents often regret when the period of ocular supervision is ended. "Experience confirms the view that the care and discipline learned in the classes is continued in after years, and thus materially reduced the risks of serious eye complications to which so many of these children are prone."

The annual report of the school medical officer of the sister city of Manchester gives a most dramatic chart of the progress of the work during the past ten years. The contrast with 1915 is remarkable. There has been a steady increase in the discovery of defects and in securing treatment for them. Note is made of the work of the school medical officers. The number of cases to be examined each hour has been reduced from ten to eight, as the larger number did not secure the best results. Uncleanliness has declined, so also have tuberculosis, skin diseases, and external eye diseases. The number of cases of enlarged tonsils and adenoids treated has increased, and the results have been satisfactory; the same is true of ear disease; here the detection of early cases has added to the total. Deafness was found to be cured or improved in 99 per cent. of cases. Zymotic diseases are held to be the outstanding cause of these defects. "The 'dummy' is," it is said,

Dublin city and the four adjoining urban districts are 419,156, which, compared with 1911, is an increase of 21,559, and with 1901 an increase of 44,021. The most recent censuses (all in 1920 or 1921) of the countries to which the people of Ireland emigrate in the largest numbers throw a valuable light on Irish emigration. To illustrate the large number of Irish-born persons living in other countries it may be mentioned that there were 1,037,234 such persons living in the United States, and 367,747 in England and Wales; altogether the number of Irish-born persons living in other countries is no less than 43 per cent. of the population of Ireland in 1926, a proportion which makes Ireland unique amongst the countries of the world. This exiled population must in itself attract a large number of emigrants, relatives and friends of the exiles, every year, no matter how prosperous conditions are in Ireland.

Correspondence.

MINER'S NYSTAGMUS.

SIR,—The letters on the subject of miner's nystagmus which have appeared in your issues of August 14th (p. 323) and August 21st (p. 361), from the pens of Dr. Vernon and Mr. A. S. Percival respectively have been of special interest to me. I venture to think that the defective illumination theory of the causation of miner's nystagmus has entirely broken down; as a corollary of that opinion, I think that the whole subject must be reinvestigated. My reasons for that view are given in various publications, particularly in the *Lancet*, May 23rd, 1925, the *Glasgow Medical Journal*, March, 1926, and in the *Transactions of the Institution of Mining Engineers*, vol. lxxi. The last mentioned contains, not only my paper, but also a very full discussion of the subject. To these publications I would respectfully call the attention of Dr. Vernon.

My reason for intruding at the present moment is once more to point out that coal-mining does not require macular vision at all, nor, in my opinion, does almost any other form of manual work. So far back as the meeting of the British Medical Association in Toronto (1906) I called attention to the fact that miners who have high degrees of myopia, say between ten and twenty diopters, are in no way inconvenienced thereby in their work. With ten diopters the remote point of macular vision is approximately at four inches, and with twenty diopters it is approximately at two. Now miners with such high errors of refraction can mine coal quite easily and that without bringing their faces to four or to two inches from the coal surface.

The important visual factors in coal-mining are (*a*) field vision, (*b*) alignment, (*c*) actual distance. There is this peculiarity about field vision, that its usefulness does not, to any extent, depend on the correction of errors of refraction. A man with a high myopia is quite capable of seeing a tramcar at a very considerable distance. If a would-be traveller, with four diopters of myopia, had to bring his face to within ten inches of the car before he saw it, then, for him, travelling would be an impossibility. The same remark holds true in navigational matters, as I showed many years ago in the *Liverpool Journal of Commerce*. A man on the look-out with three or four diopters of myopia—an amount which would, even in health, reduce his vision to about 6/60—is as competent as an emmetrope to pick up objects at sea, always provided that, apart from the myopia, the visual apparatus is perfectly healthy.

The question of alignment is very important; a simple experiment will illustrate its function. I take two small coins (shillings or halfpennies) and place one of them to be used as a fixation object on a table. The other is placed on the same table at a considerable distance from the first. I now find that while I look steadily and constantly at the first I can, at any time, without any difficulty strike the other with my outstretched hand or with a stick if the distance be too great. That roughly illustrates what I mean by alignment, and further proves that macular vision is not required to strike an object eccentrically placed in the field of vision.

Another illustration of the same thing is seen in the use of a sledge-hammer. The hammerman cannot with his macular vision fix the object which he is going to strike for the violent movements of his body prevent him doing so.

I have elsewhere discussed the estimation of distance ("Psychology of vision," *Glasgow Medical Journal*, 1921), and therefore will not prolong this letter: I only wish to repeat that manual work, including coal-mining, does not involve visual acuteness in the ordinary acceptation of that term, but it does involve field vision, proper alignment, and the estimation of distance.—I am, etc.,

Glasgow, Aug. 23rd. FREELAND FERGUS.

SIR,—With reference to the discussion now taking place in your columns on the subject of the etiology of miner's nystagmus, may I point out that the late Dr. W. H. R. Rivers in 1920 was firmly of the opinion that the disorder was psychogenetically determined, that it was, in fact, an occupation psychoneurosis?

At his instance I was appointed to investigate the psychological aspects of the disorder under the direction of the Medical Research Council. My findings were summarized in a short paper, "The psychoneurotic aspects of miner's nystagmus" in the *Journal of Medical Psychology* (1923), and, in greater detail, in "The mental factor in miner's nystagmus" in the *Journal of Mental Science* (April, 1926).—I am, etc.,

H. WILFRED EDDISON, M.B., D.P.M.

Epsom, Aug. 23rd.

OBSTRUCTION AT THE VESICAL OUTLET AFTER PROSTATECTOMY.

SIR,—In reply to Mr. Irwin's letter (August 14th, p. 324) he and I must agree to differ on the subject of perurethral diathermy in the treatment of certain fibrous types of prostatic enlargement.

I make it a practice to follow up all cases of prostatectomy, using the cystoscope to anticipate any possibility of post-operative obstruction. Where this is not done, but the patient is still able to micturate naturally, it is sometimes difficult, but not impossible, to find an opening, providing an operating urethroscope is used. The early stages of dilatation can then be effected either by the passage of a small expanding dilator (see Canny Ryall, *Operative Cystoscopy*, p. 43 et seq.) or of a guide, to which successive sizes of followers can be screwed after withdrawal of the urethroscope. The passage of the Kollmann's dilator should then present no difficulties, and both this and the treatment mentioned above can be painlessly employed providing efficient local anaesthesia is secured. I have at the moment two patients under my care in whom the curved Kollmann's dilator is being used at weekly intervals and who both continue to attend regularly.

Routine packing of the prostatic cavity is too widely employed to warrant discussion, and serves the double purpose of controlling post-operative haemorrhage and minimizing the possibility of obstruction. These, in my opinion, outweigh other less possible dangers to the patient, the attendant discomfort yielding readily to suitable drugs.—I am, etc.,

J. C. AINSWORTH-DAVIS, M.B., F.R.C.S.E.

London, W.1, Aug. 20th.

SIR,—In Mr. Irwin's reply to Mr. Ainsworth-Davis on urethral obstruction following suprapubic prostatectomy, he states that "in these cases it is sometimes impossible to find an opening at all, and frequently difficult to get a fine bougie through." With this I entirely disagree, for with a suitable urethroscope the opening into the bladder can always be seen, and can be enlarged by operating through the urethroscope. The instruments available for perurethroscopic operations are many and varied, and include bougies, knife, scissors, expanding dilators, and the diathermy electrode. Local anaesthesia suffices in these cases for painless operation. Subsequent treatment consists in the weekly passing of graduated steel bougies, or the efficient use of a Kollmann's dilator. In these days it should seldom be necessary to reopen a bladder in order to treat a stricture which is a direct consequence of prostatectomy. Mr. Irwin also refers in disparaging

beds in Stobhill Hospital, Glasgow, available for this purpose. About forty or fifty cases could be accommodated in a separate block at Stobhill Hospital, and the provisional terms proposed are 7s. a day, although it is pointed out that owing to the exacting demands such cases make on the time and care of nurses it may be necessary to revise this offer. All applications for the admission of cases to the hospital must be made to the Board of Health, who will decide whether the symptoms and circumstances of the patient justify his admission. All applications, therefore, must be made by or on behalf of local authorities, on a special form (to be obtained from the Board of Health), signed by the medical officer of health of the local authority concerned. The selection of cases for admission will be made primarily on the ground of domestic difficulty, and patients suffering from symptoms of the chronic Parkinsonian type—that is, who are bedridden and in need of constant attention—will receive special consideration. Any patient who, subsequent to admission to Stobhill Hospital, may be certified as insane will be removed to an asylum under arrangements to be made by the local authority by whom the case was sent to Stobhill.

BENEFITS OF VOLUNTARY HOSPITALS.

St. Margaret's Hospital, Auchterarder, which has been built, equipped, and endowed by Mr. A. T. Reid of Auchterarder House as a memorial to his parents, was opened on August 14th by the Duchess of Atholl, M.P. The hospital has been erected at a cost of about £10,000 and endowed with an income of approximately £1,000 a year. It stands in three acres of ground and has accommodation for fourteen beds, with operating theatre, dispensary, and other necessary adjuncts. The Duchess of Atholl, in declaring the hospital open, said that even before the war many persons had considered the days of voluntary hospitals to be numbered, and with the development of school medical services and other State responsibilities, some persons had wished the State control to be increased until no field was left for voluntary effort. These fears had increased since the war, and about the year 1920 many hospitals, especially in the south, had been in a perilous condition, from which they were saved only by a timely grant of about half a million pounds by the Government of the day. A wider recognition of the benefits that voluntary hospitals brought to the community had, however, arisen, and voluntary hospitals were now largely financed by the people for whom they were directly intended. It was a satisfaction for those who planned and gave generously to inaugurate such institutions that they are appreciated by those they were intended to benefit, and that these persons gave readily for their support. Voluntaryism to-day was stronger than many would have thought possible ten or fifteen years ago. While the recognition of responsibility by the State and by local authorities in the matter of health was welcomed, the community felt that any deterioration in the strong element of voluntaryism, which had been a part of Anglo-Saxon society, would be an impoverishment of national character. One great need that would be met by the founding of the new hospital was prompt surgical aid in cases of accident, which were nowadays more numerous than formerly. In other ways it would prove an inestimable boon to people in the surrounding parishes who needed institutional treatment, and who preferred to have that treatment under their own medical practitioner. Lord Haldane proposed a vote of thanks to the Duchess of Atholl.

TEACHING THE DEAF.

At the 116th annual meeting of the Edinburgh Royal Institution for the Education of Deaf and Dumb Children, a demonstration of teaching methods was given in the gymnasium of the institution, and Mr. Barker, the headmaster, explained that there were two methods of teaching the deaf, both of which were employed in this school. These were the speech method and the method in which the language of finger signs was used. In dancing even the youngest pupils developed the sense of rhythm which hearing children acquired by the ear. The chairman, in moving the adoption of the report, said that recent inventions like the telephone, the gramophone, and wireless telegraphy seemed to widen the gulf between normal persons and those whose organs of speech and hearing were impaired. It was interesting to recall that Graham Bell, famous as the inventor of the first telephone, was also famous for the improvement he introduced into the teaching of the deaf and dumb. This teaching was now producing remarkable results. He referred to the great praise which had been pronounced by the Scottish Education Department upon the admirable way in which this teaching was conducted, and he warmly congratulated the headmaster and staff. He referred also to the fact that a very large percentage of old pupils of the institution were now wage-earners. It was well that great attention was paid to the physical development of the pupils, and an interscholastic blue ribbon, the Lindsay swimming cup, had this year been carried off by this institution. It had not yet been sufficiently recognized by parents and education authorities that it was extremely important that the education of the deaf child should be begun at a very early age—if possible, during infancy. In conclusion, he appealed to the public for increased financial support.

EDINBURGH CLINIC FOR SURGICAL TUBERCULOSIS.

In connexion with the Municipal Tuberculosis Scheme, Dr. William Robertson, M.O.H. for Edinburgh, has issued a circular stating that an additional clinic for cases of surgical tuberculosis has been instituted at the Royal Victoria Dispensary. This clinic will be held on Wednesday afternoons at 3 o'clock, and medical practitioners are invited to avail themselves of the opportunity to send any cases in which advice and suitable treatment are required. It is intended shortly to install ultra-violet ray lamps at this centre for the purpose of making this form of treatment available to out-patients for whom it may seem desirable.

Ireland.

THE FREE STATE CENSUS OF 1926.

THE Free State census of 1926 records a decrease of 166,886 (5.3 per cent.) in the population of the twenty-six counties during the fifteen years beginning April 2nd, 1911, and ending April 18th, 1926. The salient points of the report issued by the Director of Statistics show that since April 2nd, 1911, the population of all Ireland decreased from 4,390,219 to 4,229,124—161,095, or 3.7 per cent.; Free State decreased from 3,139,688 to 2,972,802—166,886, or 5.3 per cent.; Northern Ireland increased from 1,250,351 to 1,256,322—5,791, or 0.5 per cent. There were 1,506,916 males and 1,465,886 females in the Free State as compared with 1,589,509 males and 1,550,179 females in 1911. There are 973 females to every 1,000 males in the Saorstat to-day, whereas in Northern Ireland there are 1,066 females to every 1,000 males. In Ireland as a whole there are 999 women to every 1,000 men. The political changes in the last intercensal period (resulting in particular in the withdrawal of British military forces), and the deaths of Irish soldiers in the European war, tended to retard the decline of the female-male ratio. In Dublin, as in other cities, the female population exceeds the male, while in the country districts and small towns there is a male excess. A disturbing, but hardly unexpected, feature of the census is the consistent movement of population to the towns. In 1841 the town population of the Free State was 1,266,324. In 1861 a decline set in, and continued until 1891, when the movement towards the towns began anew. In 1891 the town population was 1,053,757; to-day it is 1,095,188, while the country population during that period has fallen from 2,154,848 to 1,877,614. One of the most remarkable decreases has been in what the returns describe as the country population of the Free State. The total number of this class of resident in the year 1841 was 5,281,328; since then it has steadily decreased, and has now been reduced to 1,877,614. The town population in the same period has decreased by only 171,136 persons, but as compared with the 1911 figures shows an increase of 28,213, the total in 1926 being 1,095,188. The figures for

It will be well to emphasize again the limits of the protection afforded by the English societies.

1. A member of either society may be covered for his own acts or omissions.

2. A member of either society may be covered for the acts or omissions of his assistant, locumtenent, house-surgeon, or other subordinate medical officer who is also a member of either society.

3. A member of the Medical Defence Union, Limited, may be covered for the acts or omissions of his locumtenent who is not a member of either society.

4. A member of the London and Counties Medical Protection Society, Limited, will not be covered for the acts or omissions of his locumtenent who is not a member of either society.

5. A member of either society will not be covered for the act or omission of an assistant, house-surgeon, or other subordinate medical officer who is not a member of either society.

6. A member of either society will not be covered for the acts or omissions of a nurse or other lay person acting on his instructions.

The word "may" has been used in tabulating the cases where a cover is afforded to emphasize a further point. Even when a case comes within this classification, after it has been qualified as a case which may be considered, there is no compulsion on the society to take up the case and defend it. The council reserves the right to take up or refuse to take up any case. Whether a member is protected or not depends on the vagaries of a committee meeting.

We are told that all the societies undertook was to defend members who are unjustly attacked, and that this was interpreted in a liberal and sympathetic manner.

Let us see how this works out in practice, remembering that the basis for action is the "unjust attack." Suppose that a certain member is threatened with an action at law because of the act of an assistant. We will further suppose that the threatened action is the most unjust that the malignity of a cantankerous patient can devise. It is quite obvious that the injustice of the action has no relation whatever to the fact of the membership or otherwise of the assistant of a defence society. Yet that is the determining factor in the case. If the assistant is also a member the society will defend the unjust action; if the assistant is not a member the society will not defend the member against the unjust attack. Judged by their own standards the societies fail in their objects and pretensions. Further, we are not asking for "liberal and sympathetic treatment." We ask for a complete protection for our legal liabilities; we are willing to pay for it, and we require that it will be a "right" and not a "privilege," free from disabling provisions and exceptions.

I have heard that the English societies say they do not intend to do this, that it is impossible, and that it will mean a prohibitive subscription. Yet the letter from the Scottish society in your issue of August 7th says they have always given this cover for assistants, etc., for the ordinary subscription. Are we to assume that what is possible in Scotland is impossible in England?

I have before me now the cover note of an insurance society promising cover

"Against all third party risks incurred in the practice of the insured's profession, including prescribing, dispensing, advice to patients, and including law costs"

for the modest sum of twenty shillings for one year.

If the English societies have spoken their last word they have clearly outlived their usefulness, and have failed to march with the necessities of the times. This matter cannot be dropped. There is too much involved in it for every practitioner. The general public is becoming more and more used to reports of doctors being sued for various alleged offences. They are becoming aware of the harm they can do a doctor even by an abortive action. The disciplinary procedure of the National Health Insurance Acts is training the public in the art of discovering the weak places in our armour and in the art of framing and sustaining complaints. We ourselves stress the point of the patient's rights in these matters in all our discussions with the Ministry of Health on the question of discipline. This matter has reached such dimensions, and the risks run by all of us are so great, that a complete protection must be found. If the old defence societies fail us we can only look to the British Medical Association.—I am, etc.,

R. H. DIX,
Honorary Secretary, Sunderland Division,
August 22nd. British Medical Association.

DEFENCE OF ASSISTANTS AND LOCUMTENENTS.

SIR,—Dr. E. Farquhar Murray, in his letter in your issue of August 14th, complains that no reciprocal arrangement was made between the two other societies and the Medical and Dental Defence Union of Scotland. This was simply due to the fact that no new arrangement was required as far as the Scottish society was concerned. In stating that the London and Counties Medical Protection Society makes no statement on the protection of members in respect of locumtenents, Dr. Murray has evidently not seen my letter which appeared in your issue of April 17th, in which it is explained that this society has for many years protected, and still does protect, its members in respect of locumtenents.

The essential difference between a locumtenent and an assistant is that the locumtenent acts *in loco principalis*, and cannot possibly be controlled or guided by the principal, whereas the assistant is often acting under the instructions of his principal, and to some extent under his control and guidance.

The various circumstances in which qualified practitioners undertake locumtenency does not much affect the legal position as regards their principals. Dr. Murray can rest assured that it is in the interests of the above societies to give the fullest protection they can to their members, as they have really no interest apart from their members.—I am, etc.,

HUGH WOODS,
General Secretary, London and Counties
Victory House, Leicester Square, Medical Protection Society, Ltd.
London, W.C.2, Aug. 20th.

WEEDS, CANCER, AND ACIDITY.

SIR,—In connexion with my golf course construction work, I pointed out many years ago that weeds such as plantains, daisies, etc., will not germinate in acid soil, and quite recently the Scientific Advisory Committee of the United States Golf Association have gone into the subject very much more thoroughly and have made many experiments regarding the exact degree of acidity of soils which prevents the growth of these weeds. There is quite a simple test which estimates the exact degree of alkalinity or acidity of soil.

Since reading an account of the interesting investigations of an Indian professor (whose name I have forgotten) on the similarity between plant and animal life, described by him to the British Association, I thought it possible that cancerous growths might flourish under similar conditions to weeds in soil. There must be some determining factor that causes cancer development in one individual and not in others who live under apparently similar conditions and have been in similar contact with the cancerous germ, if there is one.

In regard to plants, roses flourish in alkaline soil, rhododendrons, gorse, heather, and fir trees in acid. Rye grasses, cocksfoot, plantains, daisies, etc., flourish in sweet or slightly acid soil, whereas the finer bent and fescue grasses require very acid conditions, and if you obtain a certain degree of acidity you get a complete freedom from plantains, daisies, clover, and so on.

Might not the degree of acidity or alkalinity of the blood and tissues be also the determining factor in the growth of cancer? If this is so, there should be no great difficulty in altering the acidity or alkalinity of the human tissues and preventing the growth of the disease.

During the last hundred years much thought has been spent and thousands of experiments made regarding the growth of weeds, and investigations have been made into the minutest details of the chemical composition and physical characteristics of soil, and finally it turns out that the solution is an extremely simple one; may not the cause and treatment of cancer be equally simple?—I am, etc.,

Moor Allerton Lodge, Leeds, Aug. 23rd. A. MACKENZIE.

terms to the routine use of packing the prostatic cavity. Personally my routine is to pack for twenty-four hours, after which the bladder is irrigated daily by the Janet method, and steel bougies are passed once or twice in the third week. Most patients on whom I have operated for enlargement of the prostate attend my clinic for urethroscopy at intervals of three months, and I find that instances of post-operative stricture are so rare and so easily treated that I seldom feel that it would have been to the patient's advantage to have been subjected to the Thompson-Walker modification of Freyer's suprapubic prostatectomy.—I am, etc.,

London, W.1, Aug. 21st. F. McG. LOUGHNANE.

RECOVERY AFTER MASSAGE OF THE HEART.

SIR,—In the JOURNAL of August 21st (p. 342) Mr. R. M. Glover makes reference to a letter of mine (BRITISH MEDICAL JOURNAL, May 22nd, 1926) commenting on a contribution of Mr. Girling Ball's under the above heading: may I be allowed a few words in reply?

Everyone interested in the problem of resuscitation will welcome Mr. Glover's letter. It supplies just the information needed, in this case the proof, that massage of the heart *alone* may suffice to restart the heart, after the failure of other physical means (change of posture, tongue-traction, hot applications, artificial respiration), applied for several minutes. His letter therefore reinforces the evidence in favour of the value of heart massage, but it does not invalidate my criticism that in Mr. Girling Ball's case another agency which had been introduced, adrenaline, might have been itself the *causa causans*, or, failing that, a *causa contribuens*. For exactly the same kind of evidence which Mr. Glover brings forward is advanced by Dr. Carl Bodon (*Lancet*, March 24th, 1923) to prove that adrenaline *alone*, injected directly into the heart, may suffice to restore the heart's action. His case went on to complete recovery.

In respect, then, of these two remedies, honours seem to be easy, with perhaps a slight advantage in favour of the chemical stimulant, as yielding a quicker cardiac response (half a minute as against two minutes), and as being more rapidly applicable.

The conclusion to be drawn, in my opinion, is that adrenaline in 1 c.cm. ampoules should always be in readiness in the operating theatre and the ward, and should be injected at once, as a first act, in such cases; and that failing response within, say, two minutes the surgeon should have recourse to heart massage.—I am, etc.,

London, W.1, Aug. 21st. HARRINGTON SAINSBURY.

MILK AS A GROWTH STIMULANT.

SIR,—Referring to the mention in your issue of August 14th (pp. 312 and 317) of the increase of weight in schoolboys of 7 to 12 years of age by a daily pint of milk, it is interesting to speculate whether any advantage ultimately accrued to them from the increased rate of development during these ages. Certainly the increase would be artificial, as our remote ancestors would not have had these opportunities in the early times when the genus was developing, and the question arises as to whether the human or other mammal can be ultimately increased in size by better feeding than the average.

Horsekeepers believe that a well fed colt will eventually be bigger because he grows faster than a badly fed colt, but I do not think there is any real evidence to this effect. The object in the case of thoroughbreds is to race them when they are mere babies of 2 years old, but it is doubtful when they are mature if they are any the better for it.

Again, there is the question when and how the hypophysis and the other glands regulating growth cease their action, whether time is the essence of the effect produced, whether their action is for a definite time or a definite amount of growth, and whether better or worse nutrition eventually makes any difference in the size of the mature animal.

It would be interesting to have any evidence on this score, as it has an important bearing on the general desire to force on the growth of the young animal.—I am, etc.,

Ingatestone, Aug. 20th. SHEFFIELD NEAVE.

THE LIVERPOOL CANCER RESEARCH ORGANIZATION.

SIR,—We propose to hold in Liverpool clinics and demonstrations of the methods employed by us in the treatment of malignant disease for clinical pathologists attached to clinics and hospitals of standing, in order that they may have the opportunity of studying at first hand the details of this work.

Subsequently "choriotrope" will be obtainable for use in the treatment of the patients of those who are attached to the clinics concerned. It is suggested that the clinical pathologists who attend the demonstrations make themselves responsible for the full and proper conduct of the examinations required in every case subsequently treated under their guidance, and that no publication regarding results be published for, say, three years.

It must be understood that the entire clinical staff of the Liverpool Cancer Research Organization is on a part-time basis, and, therefore, that members cannot place themselves entirely at the disposal of those attending, nor can these demonstrations be repeated except at long intervals, and then only to limited numbers. Consequently it may be necessary for a selection to be made from those applying if there be too many at one time. A certain number of invitations have been issued to those who have already expressed a desire to attend; but a few further applications are now invited.

The demonstrations will be chiefly conducted by Dr. Leslie Cunningham, assistant director of the Organization, and will commence at 10 a.m. on Monday, September 6th, and continue until Wednesday, September 15th.—I am, etc.,

Liverpool, Aug. 20th. W. BLAIR BELL.

THE FUNCTION OF THE SPLEEN.

SIR,—In the interesting annotation on the function of the spleen in your issue of August 21st (p. 352) it seems to me that the terms *hypotonic* and *hypertonic* are rather loosely used, as illustrated in the following sentences:

> "It is therefore concluded that the blood of the spleen is a selected blood, and that it is less resistant to hypotonic solutions. When haemolysed by saponins the blood of the spleen is more resistant than the cells of the general circulation. From other observations it is inferred that the lessened resistance to *hyper*tonicity and the greater resistance to saponins are due to a smaller content of phosphoric acid."

In hypotonic and hypertonic solutions, so far as the red cells are concerned, the osmotic current is reversed, and when they were haemolysed, by whatever agent, I should have thought that their resistance would have disappeared.

It is, or should be, well known that concussion of the sixth and seventh cervical spines dilates the spleen, and concussion of the second lumbar vertebra contracts it. The late Albert Abrams used these manipulations in the treatment of many infectious diseases by what he termed "splenic sterilization."—I am, etc.,

JAMES BARR.

Liverpool, Aug. 21st.

MEDICAL DEFENCE.

SIR,—This matter cannot be left in the position in which it emerged from the Annual Representative Meeting.

The result of the discussion is a little baffling. A resolution was tabled from the North of England Branch urging a complete and comprehensive cover of the legal liabilities of a doctor arising from the practice of his profession. A speaker on behalf of the English defence societies declared that the societies would not give such a cover, whereupon the mover of the resolution "expressed himself quite satisfied, and leave was given to withdraw the motion."

This result will not be satisfactory to the North of England Branch and those of us who have been urging the matter on the societies for the last twelve months. Little more than a year ago we thought that all our burdens would be borne by the society to which we belonged. This fond hope was shattered by the report of the solicitor to the Medical Defence Union, Limited, in its last published annual report.

THE annual dinner of the past and present students of the Westminster Hospital Medical School will take place at Gatti's Restaurant, Strand, W.C., on Friday, October 1st; the chair will be taken by Mr. William Turner, M.S., F.R.C.S., at 7 p.m.

UNDER the auspices of the Smoke Abatement League of Great Britain an exhibition will be held at Bingley Hall, Birmingham, from September 6th to 18th, to demonstrate recent scientific advances towards the elimination of the polluting substances emitted from the chimneys of factories and houses. The Public Health (Smoke Abatement) Bill introduced by the Ministry of Health has already passed through the House of Lords, and has been read a second time in the House of Commons. The exhibits will include a large industrial boiler-house believed to be almost perfect from the point of view of efficiency, fuel economy, labour-saving, and the elimination of smoke; an electric furnace for hardening and annealing pen nibs; a domestic section, with demonstrations of coal grates which consume their own smoke; smokeless fuel; central heating; panel heating; and the latest improvements in the application of gas, electricity, and oil for producing power.

THE President of the Board of Trade has appointed a standing committee to consider questions connected with the economic use of fuels and their conversion into various forms of energy. It seems reasonable to hope that the inquiries of this committee, of which Sir Alfred Mond, M.P., is chairman, may eventually result in recommendations which will diminish the smoke nuisance.

THE KING has granted authority to Dr. Clermont Grantham-Hill, Medical Inspector to the Sudan Government, to wear the decoration of the insignia of the Fourth Class of the Order of the Nile conferred upon him by the King of Egypt in recognition of valuable services rendered.

THE second general report of the People's League of Health covers the years 1922 to 1925. The object of the league is stated to be "the raising of the standard of health of the British Empire," and in its pursuit the league is involved in many activities. It endeavours to create an enlightened public opinion to support legislation which medical and other scientific men regard as necessary to the national health. It publishes statistics relating to the low standard of health in this country. It sends deputations to the Minister of Health to urge the adoption of health measures. In May, 1924, it held a conference at the British Empire Exhibition on "the latest knowledge regarding the causes, treatment, and prevention of disease." Lectures have been given at various centres and in prisons and Borstal institutions. The league has also awarded six travelling scholarships to enable the winners to visit for a short period foreign countries and to observe the health work done in those countries. The outstanding feature of the People's League of Health is the large and comprehensive Medical Council which supports and advises on its objects.

THE American Medical Association has issued the thirty-seventh edition of its abstract of laws and rulings regulating the practice of medicine in the several States and territories of the United States. The new edition had become necessary owing to the many changes made recently in the medical practice Acts, and the information now given is correct, so far as can be learned, down to June, 1926. In the latter half of the volume information is given about foreign medical schools, and about medical registration and practice in foreign countries. To judge from the two pages devoted to medical education in Great Britain, the information collected by the Council on Medical Education and Hospitals of the Association is reliable and correct.

DR. WALDO, coroner for the City of London and Southwark, in his report for 1925 states that 512 inquiries were held and that *post-mortem* examinations were ordered and carried out in all inquests of death with the exception of 18. Among the cases were 27 of suicide, 158 due to accident, and 94 to natural causes. Of the deaths due to accident 63 were caused by road vehicles—namely, 23 by motor vans, 14 by motor omnibuses, 3 by trams, 3 by charabancs, 3 by taxicabs, and 6 by motor cars and horsed vehicles; 11 pedal cyclists were killed by collisions with vehicles of various kinds. Dr. Waldo considers it a defect in the Coroners (Amendment) Bill that it does not contain a provision for the appointment of deputy coroners in districts where this cannot now be done. The worst blot in the bill, however, he thinks is that Clause 21 gives power to a coroner to order a medical practitioner to make a *post-mortem* examination and to dispense with a public inquest in certain cases. He considers that if a *post-mortem* examination is necessary an inquest also is necessary.

AT an inquest held at Nuneaton last week with regard to the death of a man, aged 52, after taking a dose of "Indian brandy," the druggist's wife informed the coroner that this was a well known preparation consisting of one part tincture of capsicum, three parts tincture of rhubarb, and four parts spirits of nitre, and that there was no recognized dose. A *post-mortem* examination was performed and medical evidence was to the effect that death was due to perforation of a gastric ulcer after swallowing a mixture containing capsicum. A verdict of death from misadventure was returned.

MESSRS. LIPPINCOTT have in the press a new edition of the *United States Dispensatory*, edited by Dr. H. C. Wood, professor of pharmacology and therapeutics in the University of Pennsylvania, Dr. C. H. Lewall, dean of the Philadelphia College of Pharmacy, and Dr. H. H. Youngken, professor of botany in the Massachusetts College of Pharmacy. This is the twenty-first edition and will contain about 2,000 pages. It purports to deal with all drugs and preparations of the latest United States and British *Pharmacopoeias*, and contains particulars about a large number of unofficial drugs.

THE late Dr. Ernest Septimus Reynolds, Emeritus Professor of Clinical Medicine in the University of Manchester, has left estate of the gross value of £30,183 with net personalty £28,180. He has bequeathed £1,000 to the Manchester Royal Infirmary to endow a bed in memory of his work in that institution.

THE seventh annual report of the Ministry of Health (1925-26) has been published by H.M. Stationery Office, and can be obtained from it, or through any of its branches, or from any bookseller (price 3s. 6d.). The subjects dealt with in it fall under the main heads of public health, local government and local finance, poor law, national health insurance, and contributory pensions. There is a separate section on the work of the Welsh Board of Health. Most of the matters treated in it have been dealt with in official publications noticed by us on various occasions during the year.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

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Authors desiring REPRINTS of their articles published in the BRITISH MEDICAL JOURNAL must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the JOURNAL, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the BRITISH MEDICAL JOURNAL are *MUSEUM 9361, 9362, 9363,* and *9364* (internal exchange, four lines).

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QUERIES AND ANSWERS.

CHRONIC ULCERS OF MUCOUS MEMBRANES.

"A. F." writes: A female patient, debilitated by frequent pregnancies, suffers from ulcers in the mouth and (she states) similar ulcers on the vulval labia. Extraction of teeth, the substitution of artificial teeth, tonics, and mouth-washes of potassium permanganate have failed to cure the patient. "A. F." thinks the condition must be systemic, and would be glad to hear of some effective treatment.

ASTHMA AND BRONCHITIS.

DR. WILLIAM CORBET (London, E.C.) suggests that "P." would be well advised to give his patient the benefit of inhalation therapy. This treatment has been in practice at the big Continental spas for many years, and has given splendid results in my own and others' hands in this country in many stubborn cases of bronchial asthma. The treatment consists in giving daily inhalations by means of a special apparatus of suitable inhalants reduced to a dry cloud. Asthmatic cases do very well on an aqueous solution of adrenaline with 1 per cent. anaesthesin, followed or combined with an oily solution of camphor, menthol, and phenol. Severe paroxysms are often instantly stopped, and the attacks tend to diminish in intensity and duration, and finally cease altogether. The apparatus can be hired or bought in London.

Obituary.

D. EDGAR FLINN, F.R.C.S.I.,

Late Medical Member, General Prisons Board, Ireland.

COLONEL D. EDGAR FLINN, F.R.C.S.I., M.R.C.P.I., died on August 18th at Dun Loaghaire, co. Dublin, aged 76. He was a son of Mr. D. E. Flinn of Buenos Aires. He received his early education at the Jesuits' School at Clongowes, and his medical courses were attended at the Royal College of Surgeons, Ireland. Colonel Flinn served for twenty years in the Territorial Forces, retiring with the rank of colonel. From 1875 to 1882 he was medical officer of health in East Staffordshire. From 1895 to 1910 he was a medical inspector of the Local Government Board in Ireland, and he was then appointed medical member of the Irish Prisons Board and chief inspector of reformatories and industrial schools; he retired in 1917, and was succeeded by Dr. C. J. MacCormack. He was a member of the Viceregal Commission to inquire into the high death rate in Belfast in 1907, and of the Dublin Typhoid Fever Committee of Inquiry; he edited the *Health Record* (1890-94), and was for ten years examiner for the D.P.H. of the Royal Colleges of Physicians and Surgeons, Ireland. He was a member of the council of the Royal College of Surgeons in Ireland, Fellow of the Royal Sanitary Institute, and was president of the State Medicine Section of the Academy of Medicine in Ireland, 1894-95. He was well known in the west of Ireland, where he served through two periods for the relief of distress under the Poor Law Relief Acts in 1895-96, following a failure of the potato crop. He was the author of *Wintering Stations in Ireland, Rural Water Supplies in Ireland, The Public Cleansing of Towns, Irish Health Resorts, The Administration of the Public Health Act in Ireland,* and many contributions to medical journals.

DR. FRANCIS JAMES MCARDLE, who died recently at Durham, aged 65, was educated at University College, Liverpool, and at Newcastle-upon-Tyne, where he obtained the diploma L.R.C.P.I. in 1887. After serving as an assistant to the late Dr. Slater of Newcastle he removed to Durham in 1888, when he succeeded the late Dr. Wild of Gilesgate, and built up a very large practice. Dr. McArdle took great interest in municipal affairs, and was for some years a member of the Durham City Council; he later became a school medical officer. He was a member of the Durham Division of the British Medical Association. Some four years ago his health became seriously impaired, and since last September he had been almost bedridden.

The death occurred on August 16th, at his residence at Burntisland, of Dr. GEORGE WIGHT; he had been in bad health for some months. Dr. Wight graduated at Edinburgh University in 1903, and took the diploma in public health in 1905. He was for over twenty years in general practice in Burntisland, and had been medical officer of health for the burgh since 1910. During the war Dr. Wight served as a captain in the R.A.M.C., and saw a considerable amount of service on the eastern front. He was 45 years of age, and is survived by a wife and two sons.

The following well known foreign medical men have recently died: Dr. C. ODDO, professor of clinical medicine at the medical school of Marseilles; Dr. A. COL, professor of materia medica at the medical school of Nantes; Dr. HENSEVAL, professor of hygiene and bacteriology at Ghent University; Dr. GEORGES PORJET of Paris, one of the pioneers of French laryngology and a founder of the *Bulletin Médical*; Dr. NIGAY of Vichy, director of the *Journal de médecine de Paris;* and Dr. WILHELM AUTENRIETH, inventor of a colorimeter and professor of medical and pharmaceutical chemistry at Freiburg University.

The Services.

DEATHS IN THE SERVICES.

WITH regret we record the death, suddenly, on July 26th, of Lieut.-Colonel Rochford Noel Hunt, D.S.O., R.A.M.C., at the age of 53. He was born on December 7th, 1872, and was educated at the University of Dublin, where he took the degrees of M.B. and B.Ch. in 1900. He was commissioned lieutenant in November, 1900, became captain in 1903, major in 1912, and lieutenant-colonel in 1923. During the war he commanded the hospital ship *Nevassa*, No. 135 Field Ambulance, No. 7 and No. 42 Casualty Clearing Stations, and No. 35 General Hospital, the latter for over four years. He saw service in Egypt and France. He was twice mentioned in dispatches in 1917, was awarded the D.S.O. in 1918, and in 1919 was the recipient of the Médaille des épidémies (Vermeil), France. Heart trouble caused him to be placed on the half-pay list and ultimately to retire on retired pay on November 23rd, 1925.

Fleet Surgeon John Black Nicoll, R.N.(ret.), died in Edinburgh on July 11th, aged 87. He was educated at the University in that city, where he graduated M.D. as long ago as 1860; he took the L.R.C.S.Ed. in the same year. He entered the navy soon after, and attained the rank of fleet surgeon in July, 1882.

Universities and Colleges.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have passed in the subjects indicated:

SURGERY.—A. K. A. Carter, M. E. M. Carter, C. E. Nicholas, J. Pattin, A. Purvis, M. Stinnesbeck, N. W. Wood.

MEDICINE.—J. Dywien, R. C. Glover, K. G. B. McMahon, T. C. Pain, P. H. Row, L. Schapera, R. S. S. Smith, J. A. H. Sykes, L. D. Williams.

FORENSIC MEDICINE.—N. H. Allen, F. W. Barton, S. B. Browning, M. E. M. Carter, F. G. Hardaker, C. E. Nicholas, K. Roberts, L. D. Williams, N. W. Wood.

MIDWIFERY.—C. B. Ball, A. Heukamp, W. Hinds, S. Jenkinson, H. S. Littlepage, J. B. Lurie, A. Purvis, R. I. Richards, T. W. Riseley, J. M. F. Whitby.

The diploma of the Society has been granted to Messrs. N. H. Allen, C. B. Ball, A. K. A. Carter, W. Hinds, J. B. Lurie, K. G. B. McMahon, T. C. Pain, A. Purvis, P. H. Row, L. Schapera, M. Stinnesbeck, J. A. H. Sykes, and J. M. F. Whitby.

Medical News.

DR. L. R. YEALLAND will open a discussion on seizures, on Wednesday, September 1st, at 9 p.m., at the Post-Graduate Hostel (Imperial Hotel, Russell Square, W.C.1), and on Friday, September 3rd, at the same hour, Dr. A. L. Gregg will deal with the sigmoidoscope in diagnosis; medical practitioners are cordially invited. On August 17th, with Dr. Long of Oklahoma in the chair, Dr. Donald Armour, introducing a discussion on head injuries, recommended an ipsolateral decompression in all cases of compression due to injuries; even the symptoms following contrecoup often yielded to it. Lumbar puncture was valuable in treating traumatic neuroses, but was dangerous in the presence of high intracranial pressure due to the possible formation of a "pressure cone." Trephining for decompression should be large. On August 19th Dr. Harold Scott, pathologist to the London Zoological Society, opened a discussion on tuberculosis among wild animals in captivity, with Dr. Simpson Wells of Capetown in the chair. The symptoms of the disease varied in animals, birds, and reptiles, but was nevertheless intercommunicable.

THE Fellowship of Medicine announces that each week at the City of London Maternity Hospital there will be a course in obstetrics, including ante- and post-natal clinics and children's welfare clinics; application to attend should be addressed to the Fellowship. During September courses will be arranged as follows: a daily afternoon course at the Central London Ophthalmic Hospital from September 6th to October 2nd; lecture demonstrations at the Bethlem Royal Hospital on Tuesdays and Saturdays, at 11 a.m., from September 7th to October 2nd; an afternoon course at the Infants Hospital, from September 13th to 25th; four lecture demonstrations by Dr. Heald at the Royal Free Hospital, on treatment by electrotherapy, on successive Wednesdays, at 5.15 p.m., beginning on September 22nd; a comprehensive course in orthopaedics at the Royal National Orthopaedic Hospital, from September 20th to October 2nd; and an all-day intensive course in medicine, surgery, and the specialties at the Westminster Hospital, from September 20th to October 2nd. Copies of all syllabuses, the general course programme, and the Fellowship journal may be obtained from the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1.